

**NOT MEASUREMENT
SENSITIVE**

**MIL-STD-40051
31 July 1996**

**SUPERSEDING
(See Section 6.4)**

DEPARTMENT OF DEFENSE STANDARD PRACTICE

TECHNICAL MANUAL PREPARATION



AMSC A7194

AREA TMSS

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

FOREWORD

1. This standard is approved for use by the Department of the Army and is available for use by all Departments and Agencies of the Department of Defense (DoD).
2. This MIL-STD-40051 series establishes the technical content requirements and mandatory style and format requirements for the preparation of paper and digital page-oriented technical manuals (TMs) and revisions required to support the various types of equipment and weapon systems within the Department of the Army. The requirements contained in this standard cover operation and maintenance at all levels through depot.
3. This 8-part book form consists of the following parts.

MIL-STD-40051	-	Technical Manual Preparation
MIL-STD-40051-1	-	General Preparation and Assembly Information
MIL-STD-40051-2	-	Introductory Information With Theory of Operation
MIL-STD-40051-3	-	Operator Instructions
MIL-STD-40051-4	-	Troubleshooting Procedures
MIL-STD-40051-5	-	Maintenance Instructions
MIL-STD-40051-6	-	Repair Parts and Special Tools List (RPSTL)
MIL-STD-40051-7	-	Supporting Information
4. Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Executive Director, USAMC Logistics Support Activity, ATTN: AMXLS-AP, Redstone Arsenal, AL 35898-7466, by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of the document or by letter.

CONTENTS

<u>PARAGRAPH</u>	<u>PAGE</u>
FOREWORD	ii
1. SCOPE	1
1.1 Scope	1
2. APPLICABLE DOCUMENTS	1
2.1 General	1
2.2 Government documents	1
2.2.1 Specifications, standards and handbooks	1
2.2.2 Other Government documents and publications	2
2.3 Non-Government publications	3
2.4 Order of precedence	4
3. DEFINITIONS	4
3.1 Additional Authorization List (AAL) items	4
3.2 Adjust	4
3.3 Align	4
3.4 American National Standards Institute (ANSI)	5
3.5 Army Master Data File (AMDF)	5
3.6 Army Oil Analysis Program (AOAP)	5
3.7 Assembled item	5
3.8 Assembly	5
3.9 Auxiliary equipment	5
3.10 Aviation Intermediate Maintenance (AVIM)	5
3.11 Aviation Unit Maintenance (AVUM)	5
3.12 Basic Issue Items (BII)	5
3.13 Basis of Issue (BOI)	5
3.14 Block diagram	5
3.15 Built-in Test Equipment (BITE)	5
3.16 Bulk material	5
3.17 Calibrate	6
3.18 Callout	6
3.19 CALS raster	6
3.20 Commercial and Government Entity Code (CAGEC)	6
3.21 Commodity Command Standard System (CCSS)	6
3.22 Complete part number	6
3.23 Complete repair	6
3.24 Component	6
3.25 Components of End Item (COEI)	6
3.26 Comprehensibility	6
3.27 Continuous Acquisition and Life-cycle Support (CALS)	6
3.28 Computer Graphics Metafile (CGM)	6
3.29 Continuous tone photographs or drawings	6
3.30 Contracting activity	7
3.31 Corrosion Prevention and Control (CPC)	7
3.32 "Current as of" date	7
3.33 Degradation	7

CONTENTS

<u>PARAGRAPH</u>	<u>PAGE</u>
3.34 Department of Defense (DoD)	7
3.35 Department of Defense Ammunition Code (DODAC)	7
3.36 Department of Defense Index of Specifications and Standards (DODISS)	7
3.37 Depot-level maintenance	7
3.38 Depot Maintenance Work Requirement (DMWR)	7
3.39 Digital graphics forms	7
3.40 Direct Support (DS) maintenance	7
3.41 Disassemble	7
3.42 Document instance	8
3.43 Document Type Definition (DTD)	8
3.44 Electronic Countermeasures (ECM)	8
3.45 Electrostatic Discharge (ESD)	8
3.46 End Item Code (EIC)	8
3.47 Equipment	8
3.48 Equipment Improvement Recommendation (EIR)	8
3.49 Essential	8
3.50 Evacuation	8
3.51 Expendable items	8
3.52 Final Reproducible Copy (FRC)	8
3.53 Flight safety hazard	8
3.54 Footer	8
3.55 Formatting Output Specification Instance (FOSI)	8
3.56 Functional diagram	8
3.57 Functional Group Code (FGC)	9
3.58 General Support (GS) maintenance	9
3.59 Grade Level (GL)	9
3.60 Graphic(s)	9
3.61 Hardness Critical Item (HCI)	9
3.62 Hardness Critical Process (HCP)	9
3.63 Hardtime scheduled maintenance	9
3.64 Header	9
3.65 Horizontal (Landscape) TM format	9
3.66 Icon	9
3.67 Illustration	9
3.68 Initial Graphics Exchange Specification (IGES)	9
3.69 Inspect	10
3.70 Institute of Electrical and Electronics Engineers (IEEE)	10
3.71 Interchangeability	10
3.72 Landscape mode	10
3.73 Leak rate	10
3.74 Legend	10
3.75 Limited repair	10
3.76 Line Replacement Unit (LRU)	10
3.77 List of Applicable Publications (LOAP)	10
3.78 Logic tree	10
3.79 Logistics Support Analysis (LSA)	10
3.80 Maintenance Allocation Chart (MAC)	10
3.81 Maintenance level	10

CONTENTS

<u>PARAGRAPH</u>	<u>PAGE</u>
3.82 Maintenance task	10
3.83 Maximum Time to Repair (MTR)	10
3.84 Meantime Between Corrective Maintenance (MTBCM)	11
3.85 Meantime Between Failures (MTBF)	11
3.86 Modified Table of Organization and Equipment (MTOE)	11
3.87 Modification Word Order (MWO)	11
3.88 Module	11
3.89 National Item Identification Number (NIIN)	11
3.90 National Stock Number (NSN)	11
3.91 Next Higher Assembly	11
3.92 Nomenclature	11
3.93 Nondestructive Testing Inspection (NDTI)	11
3.94 Nuclear, Biological, and Chemical (NBC)	11
3.95 On-condition maintenance	11
3.96 Operator maintenance	11
3.97 Orphan	11
3.98 Overall Grade Level (OGL)	12
3.99 Overhaul	12
3.100 Overhaul Inspection Procedure (OIP)	12
3.101 Part Number (P/N)	12
3.102 Phased maintenance inspection (aircraft)	12
3.103 Pictorial	12
3.104 Portrait mode	12
3.105 Prescreening	12
3.106 Preshop analysis	12
3.107 Preventive maintenance (scheduled maintenance)	12
3.108 Preventive Maintenance Checklist (PMC)	12
3.109 Preventive maintenance daily (aircraft)	12
3.110 Preventive maintenance services inspection (aircraft)	12
3.111 Preventive Maintenance Checks and Services (PMCS)	13
3.112 Procuring activity	13
3.113 Proponent	13
3.114 Quality Assurance (QA)	13
3.115 Reading Grade Level (RGL)	13
3.116 Rebuild	13
3.117 Reference designator	13
3.118 Reliability, Availability, Maintainability (RAM)	13
3.119 Reliability Centered Maintenance (RCM)	13
3.120 Remove/install	13
3.121 Repair	13
3.122 Repair part	13
3.123 Repair Parts and Special Tools List (RPSTL)	13
3.124 Replace	14
3.125 Revision	14
3.126 Schematic diagram	14
3.127 Service	14
3.128 Set	14
3.129 Source, Maintenance, and Recoverability (SMR) code	14

CONTENTS

<u>PARAGRAPH</u>	<u>PAGE</u>
3.130 Spare part	14
3.131 Special tools	14
3.132 Specialized Repair Activity (SRA)	14
3.133 Standard Generalized Markup Language (SGML)	14
3.134 Standard Generalized Markup Language (SGML) declaration	14
3.135 Subassembly	14
3.136 Supply Catalog (SC)	15
3.137 System	15
3.138 Tags	15
3.139 Tailoring	15
3.140 Task	15
3.141 Technical Manuals (TMs)	15
3.142 Test	15
3.143 Test, Measurement, and Diagnostic Equipment (TMDE)	15
3.144 Time Between Overhaul (TBO) items	15
3.145 Title Block Page	15
3.146 Top-down breakdown	15
3.147 Unit maintenance	15
3.148 Usable On Code (UOC)	16
3.149 User	16
3.150 Wiring diagram	16
3.151 Work Packages (WPs)	16
4. GENERAL REQUIREMENTS	16
4.1 General	16
4.2 Types of technical manuals	16
4.3 Selective application and tailoring	16
4.4 Style and format	16
4.4.1 Non-mandatory style and format requirements	16
4.5 Preparation of digital data for electronic delivery	16
4.5.1 Use of the DTDs/FOSIs	17
4.6 Obtaining the modular DTDs/FOSIs	17
4.6.1 World Wide Web (WWW)	17
4.6.2 Bulletin Board System (BBS)	17
4.6.3 Mail	17
5. DETAILED REQUIREMENTS	17
6. NOTES	17
6.1 Intended use	17
6.2 Issue of DODISS	17
6.3 Tailoring guidance	18
6.4 Supersession data	18
6.5 Subject term (key word) listing	18
APPENDIX A. TECHNICAL MANUAL CONTENT SELECTION MATRIXES	20

1. SCOPE.

1.1 Scope. This standard establishes the technical content, style and format requirements for all technical manuals (TMs) covering operation and maintenance, at all levels through depot. The requirements are applicable for both paper and digital page-oriented TMs.

2. APPLICABLE DOCUMENTS.

2.1 General. The documents listed in this section are specified in sections 3, 4, and 5 of MIL-STD-40051-1 through MIL-STD-40051-7. This section does not include documents cited in other sections of this multipart standard or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements documents cited in section 3, 4, and 5 of MIL-STD-40051-1 through MIL-STD-40051-7, whether or not they are listed..

2.2 Government documents.

2.2.1 Specifications, standards and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DoDISS) and supplement thereto, cited in the solicitation (see 6.2).

SPECIFICATIONS

DEPARTMENT OF DEFENSE

MIL-PRF-28000	—	Digital Representation for Communications of Product Data: IGES Application Subsets and IGES Application Protocols.
MIL-PRF-28001	—	Markup Requirements and Generic Style Specification for Electronic Printed Output and Exchange of Text.
MIL-PRF-28002	—	Raster Graphics Representation in Binary Format, Requirements for.
MIL-PRF-28003	—	Digital Representation for Communications of Illustration Data: CGM Application Profile.
MIL-T-31000	—	Technical Data Packages, General Specification for.

STANDARDS

DEPARTMENT OF DEFENSE

MIL-STD-12	—	Abbreviations for Use on Drawings and in Specifications, Standards, and Technical Documents.
MIL-STD-17-1	—	Mechanical Symbols (Other Than Aeronautical, Aerospacecraft, and Spacecraft).

MIL-STD-40051

MIL-STD-17-2	—	Mechanical Symbols for Aeronautical, Aerospacecraft, and Spacecraft Use.
MIL-STD-100	—	Engineering Drawing Practices
MIL-STD-1309	—	Definition of Terms for Testing, Measurement and Diagnostics.
MIL-STD-1686	—	Electrostatic Discharge Control Program for Protection of Electrical and Electronic Parts, Assemblies, and Equipment (Excluding Electrically Initiated Explosive Devices).
MIL-STD-1840	—	Automated Interchange of Technical Information.

HANDBOOKS

DEPARTMENT OF DEFENSE

MIL-HDBK-113	—	Guide for the Selection of Lubricants, Functional Fluids, Preservatives and Specialty Products for use in Ground Equipment Systems.
MIL-HDBK-263	—	Electrostatic Discharge Control Handbook for Protection of Electrical and Electronic Parts, Assemblies and Equipment, Excluding Electrically Initiated Explosive Devices (Metric).
MIL-HDBK-275	—	Guide for Selection of Lubricants, Fluids, and Compounds for Use in Flight Vehicles and Components.

(Unless otherwise indicated, copies of the above specifications, standards, and handbooks are available from Standardization Documents Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5904.)

H4/H8	—	Cataloging Handbook: Commercial and Government Entity Code (United States and Canada) - Name to Code.
H6	—	Federal Supply Cataloging Handbook.

(Copies of Handbooks H4/H8 and H6 are available from the Commander, Defense Logistics Services Center, Battle Creek, MI 49017-3084.)

2.2.2 Other Government documents and publications. The following other Government documents and publications form a part of this document to the extent specified herein. Unless specified otherwise, the issues are those cited in the solicitation.

DA PAM 738-751	—	Functional Users Manual for The Army Maintenance Management System-Aviation (TAMMS-A).
----------------	---	--

(Application for copies should be addressed to U.S. Army Publications Distribution Center, 2800 Eastern Blvd., Baltimore, MD 21220-2896.)

DOD 5200.1-R	—	DoD Information Security Program.
--------------	---	-----------------------------------

DOD 5200.20	—	Distribution Statements (Other Than Security) on Technical Documents.
DOD 5220.22-M	—	National Industrial Security Program for Operating Manual.
DOD 5230.24	—	Distribution Statements on Technical Documents.

(Copies of DOD 5200.1-R are available from the National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, VA 22161. Copies of DOD 5220.22-M are available from the U.S. Government Printing Office, ATTN: Superintendent of Documents, Washington, DC 20402-0001. Copies of DOD 5230.24 and DOD 5230.20 are available from Standardization Documents Order Desk, Bldg 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5904.)

CTA 50-970	—	Expendable/Durable Items (Except Medical, Class V, Repair Parts, and Heraldic Items).
DESCOM-R 702-1	—	Depot Quality Systems.
FM 1-500	—	Army Aviation Maintenance.
TB 750-93-1	—	Functional Grouping Codes: Combat, Tactical, and Support Vehicles and Special Purpose Equipment.
TM 9-1300-206	—	Ammunition and Explosives Standards.
TM 55-1500-335-23	—	Nondestructive Inspection Methods.
TM 55-1500-342-23	—	Army Aviation Maintenance Engineering Manual, Weight and Balance.
TM 1-1500-204-23	—	Aviation Unit Maintenance (AVUM) and Aviation Intermediate Maintenance (AVIM) for General Aircraft Maintenance.

(Copies of these publications are available from the U.S. Army Publications Distribution Center, 2800 Eastern Blvd, Baltimore, MD 21220-2896.)

2.3 Non-Government publications. The following documents form a part of this document to the extent specified therein. Unless otherwise specified, the issues of the documents which are DoD adopted are those listed in the issue of the DoDISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DoDISS are the issues of the documents cited in the solicitation (6.2).

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI Y14.15-1966 (R1973)	—	Electrical and Electronic Diagrams.
ANSI Y32.10	—	Diagrams, Fluid Power, Graphic Symbol for.
ISO 8879	—	Information Processing - Text and Office Systems - Standard Generalized Markup Language (SGML).

(Application for copies should be addressed to the American National Standards Institute Inc., 1430 Broadway, New York, NY 10018-3308.)

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM E380-91 — The International System of Units for Metric System.

(Application for copies should be addressed to the American Society for Testing Materials, 1916 Race Street, Philadelphia, PA 19103, or from the Standardization Documents Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)

IEEE 91-1984 — Graphic Symbols for Logic Functions.

IEEE 200-75 — Reference Designators for Electrical and Electronics Parts and Equipments.

IEEE 260-78 — IEEE Standard Letter Symbols for Units of Measurement.

IEEE 280-85 — Letter Symbols for Use in Electrical Science and Electrical Engineering.

IEEE 315A-86 — Graphic Symbols for Electrical and Electronic Diagrams.

IEEE 945-84 — IEEE Recommended Practice for Preferred Metric Units for Use in Electrical and Electronics, Science and Technology.

(Application for copies should be addressed to the Institute of Electrical and Electronics Engineers, Inc., 345 East 47th Street, New York, NY 10017 or from the Standardization Documents Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

2.4 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. **DEFINITIONS.**

3.1 Additional Authorization List (AAL) items. Items are optional (discretionary), are not essential to operate the end item, and are not listed on engineering drawings. It is not turned in with the end item.

3.2 Adjust. To maintain or regulate within prescribed limits, by bringing into proper position, or by setting the operating characteristics to specified parameters.

3.3 Align. To adjust specified variable elements of an item to bring about optimum or desired performance.

3.4 American National Standards Institute (ANSI). A private sector organization which plans, develops, establishes or coordinates standards, specifications, handbooks or related documents.

- 3.5 Army Master Data File (AMDF). The files required to record, maintain, and distribute supply management data between and from Army commands to requiring activities.
- 3.6 Army Oil Analysis Program (AOAP). Effort to detect impending equipment component failure and determine lubricant condition through periodic analytical evaluation of oil samples.
- 3.7 Assembled item. An item source coded AO, AF, AH, AL, or AD that is not stocked as an assembly but is assembled from its constituent repair parts.
- 3.8 Assembly. Two or more parts or subassemblies joined together to perform a specific function and capable of disassembly (e.g., brake assembly, fan assembly, audio frequency amplifier).

NOTE

The distinction between an assembly and subassembly is determined by the individual application. An assembly in one instance may be a subassembly in another where it forms a portion of an assembly.

- 3.9 Auxiliary equipment. Equipment, accessories, or devices which, when used with basic equipment, extend or increase its capability (e.g., Modified Table of Organization and Equipment (MTOE) items, etc.).
- 3.10 Aviation Intermediate Maintenance (AVIM). The next higher maintenance level after Unit-Organizational. Aircraft maintenance at this level is the responsibility of, and is performed by, designated maintenance activities for direct support of the using organizations. Its phases normally consist of: calibration, repair, or replacement of damaged or unserviceable parts, components or assemblies; emergency manufacture of nonavailable parts; and technical assistance to using organizations.
- 3.11 Aviation Unit Maintenance (AVUM). Aircraft maintenance which is the responsibility of, and is performed by, the using organization on its assigned equipment. Its phases normally consist of inspecting, servicing, lubricating, adjusting, and replacing parts, minor assemblies and subassemblies.
- 3.12 Basic Issue Items (BII). Equipment essential for operation, do emergency repairs, but not listed on the drawings. These items are shipped separately packaged, but must be with the equipment when it is operated or transferred between property accounts.
- 3.13 Basis of Issue (BOI). The quantity of an item (special tool) authorized for the end item density spread or for the unit level specified.
- 3.14 Block diagram. A modified schematic diagram in which each group of maintenance-significant components that together perform one or more functions is represented by a single symbol or block. The block or symbol representing the group of components shows simplified relevant input and output signals pertinent to the subject diagram.
- 3.15 Built-in Test Equipment (BITE). Any identifiable device that is a part of the supported end item and is used for testing that supported end item.
- 3.16 Bulk material. Material issued in bulk for manufacture or fabrication of support items (e.g., sheet metal, pipe tubing, bar stock, or gasket material); excludes expendable items.

- 3.17 Calibrate. To determine and cause corrections or adjustments to be made to instruments or test, measuring, and diagnostic equipment used in precision measurement. Consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.
- 3.18 Callout. Anything placed on an illustration to aid in identifying the objects being illustrated, such as index numbers, nomenclature, leader lines, and arrows.
- 3.19 CALS raster. Compressed scanned raster images (CCITT, Group 4) in accordance with MIL-PRF-28002.
- 3.20 Commercial and Government Entity Code (CAGEC). A five character code assigned to commercial activities that manufacture or supply items used by the Federal Government and to Government activities that control design or are responsible for the development of certain specifications, standards, or drawings which control the design of Government items. CAGE Code assignments are listed in the H4/H8 CAGE Publications.
- 3.21 Commodity Command Standard System (CCSS). A system that standardizes the wholesale logistics operations performed by the major subordinate commands of the U.S. Army Materiel Command in the management of secondary items and repair parts.
- 3.22 Complete part number. Consists of the CAGEC and part number; used for requisition processing. The CAGEC is entered on a requisition form first, followed by the part number.
- 3.23 Complete repair. Maintenance capacity, capability, and authority to perform all the corrective maintenance tasks of the repair function in a use or user environment in order to restore serviceability to a failed item. Excludes the prescriptive maintenance functions, overhaul and rebuild.
- 3.24 Component. A constituent part not normally considered to be capable of independent operation; a piece part.
- 3.25 Components of End Item (COEI). Items identified on the engineering drawing tree which are physically separated and distinct from the end item.
- 3.26 Comprehensibility. The completeness with which a user in the target audience understands the information in the TM.
- 3.27 Continuous Acquisition and Life-cycle Support (CALS). A DoD initiative to transition from paper-intensive, non-integrated weapon systems design, manufacturing, and support processes to a highly automated and integrated mode of operation. This transition will be facilitated by acquiring, managing, and using technical data in standardized digital form.
- 3.28 Computer Graphics Metafile (CGM). One of three standard digital forms for graphics preparation. Defined by MIL-PRF-28003.
- 3.29 Continuous tone photographs or drawings. Continuous tone photographs or drawings have a continuous gradation of tonal values ranging from light (white) to dark (black), including gray. These tonal values are not created by lines or dots.

- 3.30 Contracting activity. The Department of Defense (DoD) component, activity, or organization of a using military service, or that organization delegated by a using service, that is responsible for the selection and determination of requirements for TMs.
- 3.31 Corrosion Prevention and Control (CPC). Systematic maintenance steps/procedures taken to prevent or retard the gradual destruction and/or pitting of a metal surface or other materials, such as rubber and plastic, due to chemical attack.
- 3.32 "Current as of" date. Indicates the date that all data in the Repair Parts and Special Tools List (RPSTL) were verified as being current prior to forwarding for printing.
- 3.33 Degradation. The reduction in systems/subsystems/components performance capability.
- 3.34 Department of Defense (DoD). The Office of the Secretary of Defense (OSD) (including all boards and councils), the Military Departments (Army, Navy, and Air Force), the Organization of the Joint Chiefs of Staff (OJCS), the Unified and Specified Commands, and the Defense Agencies.
- 3.35 Department of Defense Ammunition Code (DODAC). An eight character code developed to indicate interchangeability of ammunition and explosive items in Federal Supply Classification (FSC) Group 13. This eight-character code is divided into two parts. The two parts are separated by a hyphen. The first four digits represent the FSC; the letter and last three numerals represent the DoD Identification Code that is assigned to items that are interchangeable in function and use. The eight-character DoD ammunition code is used for such ammunition operations as worldwide stock status reporting and requisitioning when specific items are not required.
- 3.36 Department of Defense Index of Specifications and Standards (DODISS). The DoD publication that lists unclassified Federal and military specifications and standards, related standardization documents, and voluntary standards approved for use by DoD.
- 3.37 Depot-level maintenance. Maintenance that is beyond the capability of the unit, direct support, and general support activities. Depot-level maintenance normally consists of overhaul, recondition, manufacture, repair, or modification and requires technical assistance beyond lower maintenance level capability.
- 3.38 Depot Maintenance Work Requirement (DMWR). A maintenance serviceability document for depot maintenance operations. The document prescribes the essential factors to ensure that an acceptable and cost-effective product is obtained.
- 3.39 Digital graphics forms. Any of three standard graphics forms acceptable for graphics preparation under this standard. These forms include Computer Graphics Metafile (CGM), CALS raster, and Initial Graphics Exchange Specification (IGES).
- 3.40 Direct Support (DS) maintenance. Maintenance accomplished on a component, accessory, assembly, subassembly, plug-in unit, or other portion either on the system or after it is removed. The replace function for this level of maintenance is indicated by the letter "F" appearing in the third position of the Source, Maintenance, Recoverability (SMR) code. An "F" appearing in the fourth position of the SMR code indicates complete repair is possible at the direct support maintenance level.
- 3.41 Disassemble. The step-by-step taking apart (or breakdown) of a spare or functional group-coded item to the level of its least componentry identified as maintenance-significant (i.e., assigned an SMR code for the category of maintenance under consideration).

- 3.42 Document instance. The part of a Standard Generalized Markup Language (SGML) document which contains the markup textual data.
- 3.43 Document Type Definition (DTD). The definition of the markup rules for a given class of documents. A DTD or reference to one should be contained in any SGML conforming document.
- 3.44 Electronic Countermeasures (ECM). Electronic surveillance equipment for detecting and advertizing threatening enemy weapons systems.
- 3.45 Electrostatic Discharge (ESD). Static electricity. A transfer of electrostatic charge between objects of different potentials caused by direct contact or induced by an electrostatic field. Devices such as integrated circuits and discrete devices (e.g., resistors, transistors, and other semiconductor devices) are susceptible to damage from electrostatic discharge.
- 3.46 End Item Code (EIC). A final combination of end products, component parts, or materials that is ready for its intended use (e.g., tank, mobile machine shop, aircraft, receiver, rifle, recorder).
- 3.47 Equipment. One or more units capable of performing specified functions.
- 3.48 Equipment Improvement Recommendation (EIR). Solicitation of suggestions from end item users/operators for means to improve the operation and effectiveness of equipment. SF 368 is the instrument by which suggested improvements are forwarded to the proponent agency.
- 3.49 Essential. Those systems/subsystems/components that are required for a designated mission or system operation.
- 3.50 Evacuation. A combat service support function which involves the movement of recovered material from a main supply route; maintenance collection material may be returned to the user, to the supply system for reissue, or to property disposal activities.
- 3.51 Expendable items. Items, other than repair parts, that are consumed in use (e.g., paint, lubricants, wiping rags, tape, cleaning compounds, sandpaper).
- 3.52 Final Reproducible Copy (FRC). The final document ready for reproduction and publication as an authenticated TM, including all necessary changes made as a result of validation/verification and acquisition activity conditions of acceptance or approval. The delivery media includes, but is not limited to, reproducible camera-ready copy, direct image copies, negatives, disks, tapes, etc., as specified. For Army, FRC equates to Final Draft Equipment Publication (FDEP).
- 3.53 Flight safety hazard. An existing or potential condition that can result in a flight mishap.
- 3.54 Footer. One or more lines of standard text that appear at the bottom of each page (also called feet and running feet).
- 3.55 Formatting Output Specification Instance (FOSI). The FOSI interprets the style and formatting requirements of the Output Specification (OS). The FOSI can include font, leading, hyphenation characteristics, etc.

3.56 Functional diagram. A type of illustration in which symbols are connected by lines to show relationships among the symbols. The symbols may be rectangles or other shapes, standard electronic symbols representing components or functions, or pictorials representing equipment or components. Where appropriate, voltage readings shall be shown. The lines may represent procedures or processes, such as signal or logic flow, and physical items, such as wires. Functional diagram includes schematics, wiring and piping diagrams, logic diagrams, flow charts, and block diagrams.

3.57 Functional Group Code (FGC). A basic (usually two-position) group code assigned to identify major components, assemblies, and subassemblies to a functional system. Subordinate subfunctional groups/subassemblies are coded to relate back to the basic (top position) FGC in a sequential, Next Higher Assembly (NHA) relationship (i.e., top-down breakdown structure).

3.58 General Support (GS) maintenance. Maintenance accomplished on a component, accessory, assembly, subassembly, plug-in unit, or other portion either on the system or after it is removed. The replace function for this level of maintenance is indicated by the letter "H" appearing in the third position of the SMR code. An "H" appearing in the fourth position of the SMR code indicates complete repair is possible at the general support maintenance level.

3.59 Grade Level (GL). Level of reading comprehensibility to which a document is written. The required reading grade level of a document is specified by the contracting activity. For example a level of about seventh grade may be required for materials of a technical nature to be included in maintenance manuals.

3.60 Graphic(s). Any type of presentation or representation which gives a clear visual impression.

3.61 Hardness Critical Item (HCI). A support item that provides the equipment with special protection from electromagnetic pulse (EMP) damage during a nuclear attack.

3.62 Hardness Critical Process (HCP). A process affecting a mission critical item which could degrade system survivability in a nuclear, biological, or chemical hostile environment if hardness were not considered. Nuclear HCPs are processes, finishes, specifications, manufacturing techniques, and/or procedures which are hardness critical, and which, if changed, could degrade nuclear hardness.

3.63 Hardtime scheduled maintenance. Hardtime maintenance is scheduled maintenance conducted at predetermined fixed intervals because of age, calendar, or usage such as operating time, flying hours, miles driven, or rounds fired.

3.64 Header. One or more lines of standard text that appear at the top of each page (also called heads and running heads).

3.65 Horizontal (Landscape) TM format. Positioning of technical manual so that page horizontal (width) dimensions are greater than vertical (height) dimensions.

3.66 Icon. Pictorial representation; visual image to give immediate recognition of a hazard or to provide essential information.

3.67 Illustration. A general term meaning graphic presentations of all types. Illustrations include pictorials, functional diagrams, and line graphs. This term is used instead of such terms as figure, graphic, drawing, diagram, and artwork.

- 3.68 Initial Graphics Exchange Specification (IGES). One of three standard digital forms for graphics preparation. Defined by MIL-PRF-28000.
- 3.69 Inspect. To determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination (e.g., by sight, sound, or feel).
- 3.70 Institute of Electrical and Electronics Engineers (IEEE). Membership organization that includes engineers, scientists and students in electronics and allied fields. Founded in 1963, it has over 300,000 members and is involved with setting standards for computers and communications.
- 3.71 Interchangeability. Defined in this specification as above, the scope of classic interchangeability. The intent/purpose of this specification is to allow fully innovative fixes/repairs to the aircraft. This includes minor modifications that can be made to achieve interchangeability. Capable of being put or used in place of each other.
- 3.72 Landscape mode. To print an image sideways on the page so that the longest edge of the form corresponds to the horizontal axis.
- 3.73 Leak rate. The speed or rate of flow of accidental escape of fluid or gas from a system which is caused by damage processes. The leak rate is influenced by such factors as the hole size, internal/external pressures, and fluid level.
- 3.74 Legend. A tabular listing and explanation of the numbers or symbols on a figure or an illustration.
- 3.75 Limited repair. Scope of corrective repair authorized to be performed by a level of maintenance lower than the level of authorized complete repair.
- 3.76 Line Replacement Unit (LRU). An item normally removed and replaced as a single unit to correct a deficiency or malfunction on a weapon system or end item of equipment.
- 3.77 List of Applicable Publications (LOAP). A listing of publications which are applicable to a piece of equipment or a group of equipment.
- 3.78 Logic tree. Diagram comprised of a branching series of questions, resulting in a “yes” or “no” answer, leading to determination and resolution of problem.
- 3.79 Logistics Support Analysis (LSA). The selective application of scientific and engineering efforts undertaken during the acquisition process, as part of the systems engineering process, to assist in acquiring the required support, and providing the required support during the operational phase at minimum cost.
- 3.80 Maintenance Allocation Chart (MAC). A list of equipment maintenance functions showing maintenance level. The MAC is arranged in functional group code sequence or in top-down, breakdown sequence in the logical order of disassembly following the RPSTL order of assembly/subassembly listings.
- 3.81 Maintenance level. The separation of maintenance activities or functions in the U.S. Army according to the required skills and available facilities.
- 3.82 Maintenance task. A series of related maintenance procedures with a definite beginning and end.

- 3.83 Maximum Time to Repair (MTR). The maximum corrective maintenance downtime within which a specified percent (normally 90 or 95 percent) of all corrective maintenance actions can be accomplished.
- 3.84 Meantime Between Corrective Maintenance (MTBCM). For a particular interval, the total functional life of a population of an item divided by the total number of failures within the population during the measurement interval. The definition holds for time, rounds, miles, events, or other measure of life units. (Used only when referring to depot level maintenance.)
- 3.85 Meantime Between Failures (MTBF). For a particular interval, the total functional life of a population of an item divided by the total number of failures within the population during the measurement interval. The definition holds for time, rounds, miles, events, or other measure of life units.
- 3.86 Modified Table of Organization and Equipment (MTOE). A modified version of a TOE that prescribed the unit organization, personnel, and equipment needed to perform an assigned mission in a specific geographical or operational environment.
- 3.87 Modification Word Order (MWO). Detailed instructions (including text and graphics) for making changes/improvements to a particular system in order to bring the system up to date and/or to improve its overall efficiency.
- 3.88 Module. A subassembly that, in the area of electronic systems, may be removed and replaced without use of soldering equipment or special tools; a module may be encapsulated.
- 3.89 National Item Identification Number (NIIN). The last nine digits of the National/NATO stock number. The first two digits of the NIIN identify the country assigning the number and the remaining seven digits are a serially assigned number.
- 3.90 National Stock Number (NSN). A 13-digit number assigned to a repair part to be used for requisitioning purposes.
- 3.91 Next Higher Assembly. Assembly or subassembly of which subject component(s) or subassembly are a subpart.
- 3.92 Nomenclature. The approved name or alphanumeric identifier assigned to an item, equipment, or component in agreement with an organized designation system.
- 3.93 Nondestructive Testing Inspection (NDTI). Testing of a nature which does not impair the useability of the item.
- 3.94 Nuclear, Biological, and Chemical (NBC). Reference to decontamination procedures performed on equipment and/or personnel exposed to nuclear, biological, and chemical weapons.
- 3.95 On-condition maintenance. Maintenance performed or an item replacement action performed based upon condition of the item as determined by an evaluation of each item on a scheduled basis.
- 3.96 Operator maintenance. Consists of inspecting, servicing, lubricating, adjusting, replacing, and repairing those items authorized by Logistic Support Analysis (LSA) and/or Maintenance Allocation Chart (MAC).

- 3.97 Orphan. Last line of a paragraph pushed to a new page, stranded alone (orphaned) at the top of the page without the rest of its paragraph.
- 3.98 Overall Grade Level (OGL). Computed average reading comprehensibility of specified number of document text samples.
- 3.99 Overhaul. That maintenance effort (service/action) prescribed to restore an item to a completely serviceable/operational condition as required by maintenance standards in appropriate technical publications. Overhaul does not normally return an item to like new condition.
- 3.100 Overhaul Inspection Procedure (OIP). Routine maintenance inspection conducted just prior to period specified for removal of aircraft is for overhaul or retirement.
- 3.101 Part Number (P/N). A primary number used to identify an item used by the manufacturer (individual, company, firm, corporation, or Government activity) that controls the design, characteristics, and production of the item by means of its engineering drawings, specifications, and inspection requirements.
- 3.102 Phased maintenance inspection (aircraft). A thorough and searching examination of the aircraft and associated equipment. Removal of access plates, panels, screens, and some partial disassembly of the aircraft is required to complete the inspection. Inspections are due after an appointed number of flying hours since new or from the completion of the last inspection.
- 3.103 Pictorial. A type of illustration showing the physical appearance of equipment or component parts. This term is used instead of such general terms as illustration, drawing, and diagram.
- 3.104 Portrait mode. To print an image the regular way so that the longest edge of the form corresponds to the vertical axis.
- 3.105 Prescreening. A process in which a clear material with a dot pattern or crossing opaque lines is used through which an image is photographed in making a halftone.
- 3.106 Preshop analysis. To determine, prior to beginning maintenance activities, the extent of maintenance required to return the end item, assembly, subassembly, or component to a serviceable condition as specified by the depot level maintenance instructions.
- 3.107 Preventive maintenance (scheduled maintenance). The performance of scheduled inspections and maintenance functions necessary to keep the equipment in serviceable condition and ready for its primary mission.
- 3.108 Preventive Maintenance Checklist (PMC). A listing of all before, during, and after operation preventive maintenance checks, including tactical and safety checks, that the operator or crew performs to ensure that the equipment is mission capable and in good operating condition.
- 3.109 Preventive maintenance daily (aircraft). Inspection of aircraft and associated equipment after the last flight of the mission day or before the first flight of the next day. Some operational checks and removal of screens, panels, and inspection plates may be required to accomplish the inspection.
- 3.110 Preventive maintenance services inspection (aircraft). Special recurring inspection of aircraft and associated equipment after an appointed number of flying hours or days whichever occurs first (e.g. 10 flying

hours or 14 days). Some operational checks and removal of screens, panels and inspection plates may be required to accomplish the inspection.

3.111 Preventive Maintenance Checks and Services (PMCS). Periodic inspection and maintenance at scheduled intervals to ensure that the equipment and its components remain mission capable and in good operating condition. In aircraft, checks are required of mandatory safety-of-flight items. Lubrication is part of PMCS.

3.112 Procuring activity. The agency responsible for the purchasing of supplies or services.

3.113 Proponent. An Army organization or staff which has been assigned primary responsibility for material or subject matter in its area of interest.

3.114 Quality Assurance (QA). A planned and systematic pattern of all actions necessary to provide adequate confidence that the item or product conforms to established technical requirements.

3.115 Reading Grade Level (RGL). A measurement of reading difficulty of text related to grade levels (such as ninth grade level, fourteenth grade level, etc.).

3.116 Rebuild. Consists of those services/actions necessary for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing tolerances.

3.117 Reference designator. Letters or numbers, or both, used to identify and locate discreet units, portions thereof, and basic parts of a specific equipment, assembly, or subassembly.

3.118 Reliability, Availability, Maintainability (RAM). Requirements imposed on materiel systems to ensure that they are operationally ready for use when needed, will successfully perform assigned functions, and can be economically operated and maintained within the scope of logistic concepts and policies.

3.119 Reliability Centered Maintenance (RCM). A systematic approach for identifying preventive maintenance tasks for an equipment end item in accordance with a specified set of procedures and for establishing intervals between maintenance tasks.

3.120 Remove/install. To remove and install the same item when required to perform service or other maintenance functions. Install may be the act of emplacing, seating, or fixing into position a spare, repair part, or module (component or assembly) in a manner to allow the proper functioning of an equipment or system.

3.121 Repair. The application of maintenance services (inspect, test, service, adjust, align, calibrate, and/or replace), including fault location/troubleshooting, removal/installation, and disassembly/assembly procedures, and maintenance actions to identify troubles and restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly), end item, or system. Repair is authorized by the LSA/MAC and the assigned maintenance level is shown as the fourth position code of the SMR code.

3.122 Repair part. Any component required for maintenance/repair of an end item/equipment.

3.123 Repair Parts and Special Tools List (RPSTL). The technical document which contains an introduction, list of repair parts, list of special tools, NSN index, part number index, and reference designator index for a specified end item of equipment.

3.124 Replace. To remove an unserviceable spare or repair part and install a serviceable counterpart in its place. Replace is authorized by the LSA/MAC and the assigned maintenance level is shown as the third position code of the SMR code.

3.125 Revision. A revision is a second or subsequent edition of a manual that supersedes the preceding edition with all its changes.

3.126 Schematic diagram. A graphic representation showing the interrelationship of each component or group of components in the system/equipment. The essential characteristic of these diagrams is that every maintenance-significant functional component is separately represented. Also, where appropriate, voltage readings shall be shown.

3.127 Service. Operations required periodically to keep an item in proper operating condition (i.e., to clean (includes decontaminate, when required), to preserve, to drain, to paint, or to replenish fuel, lubricants, chemical fluids, or gases).

3.128 Set. A unit and necessary assemblies, subassemblies, and parts connected together or used in association to perform an operational function (e.g., radio receiving set, measuring set, radar, or homing set which includes parts, assemblies, and units such as cables, microphones, and measuring instruments).

3.129 Source, Maintenance, and Recoverability (SMR) code. The five-position code containing supply/requisitioning information, maintenance level authorization criteria, and disposition instruction. The first two positions of the SMR code determine how to get an item. The third position represents who can install, replace, or use the item. The fourth position dictates who can do complete repair on the item. The fifth position represents who determines disposition action on unserviceable items.

3.130 Spare part. Any reparable and recoverable component required for the maintenance or repair of an end item or equipment (will have a recoverability code other than "Z" and will be assigned an FGC or subfunctional group code in the MAC).

3.131 Special tools. Those tools that have single or peculiar application to a specific end item/system.

3.132 Specialized Repair Activity (SRA). A level of maintenance usually characterized by the capability to perform maintenance functions requiring specialized skills, disciplined quality control, highly sophisticated and expensive special tools, and TMDE. Its phases normally consist of adjustments, calibration, alignment, testing, troubleshooting, assembly, disassembly, fault isolation, and repair of unserviceable parts, modules, and printed circuit boards (PCB).

3.133 Standard Generalized Markup Language (SGML). A language for document representation that formalizes markup and frees it of system and processing dependencies.

3.134 Standard Generalized Markup Language (SGML) declaration. Defines which characters are used in a document instance, in which syntax the DTD is written, which SGML features are used, etc.

3.135 Subassembly. Two or more parts that form a portion of an assembly or a component replaceable as a whole, but having a part or parts that are individually replaceable (e.g., gun mount stand, window recoil mechanism, floating piston, intermediate frequency strip, mounting board with mounted parts).

3.136 Supply Catalog (SC). The DA publication which is the configuration control document that provides the user identification of an (SKO) and its components. It also provides user supply management data and is an accountability aid.

3.137 System. A group of items united or regulated by interaction or interdependence to accomplish a set of specific functions.

3.138 Tags. Descriptive markup, as in a start-tag and end-tag.

3.139 Tailoring. The process of evaluating individual potential requirements to determine their pertinence and cost effectiveness. The tailoring of data requirements is limited to the exclusion of information requirement provisions and selecting or specifying applicable requirements.

3.140 Task. A sequence of user actions with a beginning and an end. User tasks relate to installation, checkout, operation, and maintenance of systems or equipment.

3.141 Technical Manuals (TMs). Manuals that contain instructions for the installation, operation, maintenance, and support of weapon systems, weapon system components, and support equipment. TM information may be presented, according to prior agreement between the contractor and the Government, in any form or characteristic, including hard printed copy, audio and visual displays, electronic imbedded media, disks, other electronic devices, or other media. They normally include operational and maintenance instructions, parts lists, and related technical information or procedures exclusive of administrative procedures.

3.142 Test. To verify serviceability by measuring the mechanical, pneumatic, hydraulic, electrical or electronic characteristics of an item and comparing those characteristics with prescribed standards.

3.143 Test, Measurement, and Diagnostic Equipment (TMDE). Any system or device used to evaluate the operational condition of an end item or subsystem thereof, or to identify and/or isolate any actual or potential malfunction. TMDE includes diagnostic and prognostic equipment, semiautomatic and automatic test equipment (with issued software), and calibration test or measurement equipment.

3.144 Time Between Overhaul (TBO) items. Those items having a definite retirement schedule within a defined overhaul interval, e.g., those items which must be replaced within a system assembly, subassembly, or component between scheduled overhauls.

3.145 Title Block Page. The first page after the warning summary in the front matter portion of a TM. It identifies the TM by publication number, date, title and NSN/part number/model of equipment covered in the manual.

3.146 Top-down breakdown. The pyramidal breakdown of an end item, with the top item being the complete end item. The process of breakdown is established from the engineering drawing structure in an NHA progression until the lowest reparable in each family tree group is identified. All nonreparables (spare parts) can be identified in like manner to establish their NHA relationships.

3.147 Unit maintenance. The responsibility of a using organization to perform maintenance on its assigned equipment. It normally consists of inspecting, servicing, lubricating, adjusting, and replacing parts, minor assemblies, and subassemblies. The replace function for this level of maintenance is indicated by the letter "O" in the third position of the SMR code. An "O" appearing in the fourth position of the SMR code indicates complete repair is possible at the unit maintenance level.

3.148 Usable On Code (UOC). A three-position alphanumeric code representing the applicable configuration in which an item is used. When an item is used on all configurations or when only one configuration is covered by the RPSTL, UOCs shall not be shown.

3.149 User. A person supported by the technical manual.

3.150 Wiring diagram. Diagram illustrating signal flow or wiring connections. Where appropriate, voltage readings shall be shown.

3.151 Work Packages (WPs). Presentation of information functionally divided into individual task packages in the logical order of work sequence. These WPs shall be stand alone general information, operating, maintenance, troubleshooting, parts, and supporting information units containing all information required for directing task performance.

4. **GENERAL REQUIREMENTS.**

4.1 General. Technical content, style and format requirements for the preparation of technical manuals are provided in MIL-STD-40051, Parts 1 through 7. They contain general technical content information, mandatory style and format requirements, and TM assembly instructions for the preparation and delivery of all TMs and revisions covering operation and maintenance, at all levels through depot.

4.2 Types of technical manuals. Appendix A, Technical Manual Content Selection Matrixes, of MIL-STD-40051 lists specific technical content requirements for each type of maintenance manual, including multilevel TMs, covered by this standard. Each type of TM shall provide in detail the maintenance coverage prescribed for the applicable maintenance level(s) by the Maintenance Allocation Chart (MAC) and SMR-coded items.

4.3 Selective application and tailoring. MIL-STD-40051 contains some requirements that may not be applicable to the preparation of all technical manuals. Selective application and tailoring of requirements contained in MIL-STD-40051 are the responsibility of the contracting activity and shall be accomplished through the use of Appendix A, Technical Manual Content Selection Matrixes, of MIL-STD-40051. The applicability of some requirements is also designated by one of the following statements: unless specified otherwise by the contracting activity; as/when specified by the contracting activity; or when specified by the procuring or proponent activity.

4.4 Style and format. Style and format contained in this standard are considered mandatory and are intended for compliance. The examples provided at the rear of this Part of the standard are an accurate interpretation of the mandatory style and format requirements contained herein and shall be followed to ensure that the conforming Document Type Definitions (DTDs) can be used to develop digital data in accordance with MIL-PRF-28001.

4.4.1 Non-mandatory style and format requirements. Preferred general style and format requirements for the preparation of Army TMs are provided by the procuring activity.

4.5 Preparation of digital data for electronic delivery. Technical manual data prepared in work package format and delivered digitally in accordance with this standard shall be SGML tagged and assembled using modular Document Type Definitions (DTDs) and Formatting Output Specification Instances (FOSIs). The DTDs and FOSIs have been developed in accordance with MIL-PRF-28001 and ISO 8879. Refer to 4.6 for information on obtaining or accessing the modular DTDs and FOSIs.

4.5.1 Use of the DTDs/FOSIs. The modular DTDs referenced in this standard interpret the technical content and structure for the functional requirements contained in this standard and are mandatory for use. The modular FOSIs referenced herein interprets the style and format. As specified by the contracting activity, FOSIs or style sheets may be used to produce final reproducible paper copy for all TMs prepared in accordance with this standard.

4.6 Obtaining the modular DTDs/FOSIs. The DTDs, FOSIs and associated tag and attribute descriptions, which are SGML constructs, may be obtained from the Army SGML Registry and Library (ASRL). The ASRL assets may be obtained using the methods described in 4.6.1 through 4.6.3.

4.6.1 World Wide Web (WWW). The homepage for the ASRL may be accessed through the Uniform Resource Locator (URL). The URL will be specified by the contracting activity.

4.6.2 Bulletin Board System (BBS). The ASRL BBS may be accessed at (1-888) 880-ASRL. From the Main Menu, select the Files Menu to access the various File Areas in which the DTDs and FOSIs are categorized and available for download. For those who wish to access and browse the ASRL BBS through a graphical user interface, a self-extracting, self-installing Windows-based application, "Wildcat Navigator", is available for free. The file, *wcnav.exe*, is downloadable from "File Area 10 - Navigator" from the Files Menu.

4.6.3 Mail. Requested files will be mailed on 3.5" DOS formatted diskettes or on 1/4" UNIX tar formatted tape.

a. Written request:

Commander, USAPPC
Attn.: ASQZ - PDP
2461 Eisenhower Avenue
Alexandria, VA 22331

b. Telephone request:

Commercial: 1 (703) 428-0508/0504
DSN: 328-0508/0504

5. DETAILED REQUIREMENTS.

This section is not applicable to this Part.

6. NOTES.

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. The MIL-STD-40051 series prescribes requirements applicable to various types of technical manuals, and the revisions for these manuals as prepared by or for the Department of the Army.

6.2 Issue of DODISS. When this document is used in acquisition, the applicable issue of the DODISS must be cited in the solicitation. (See 2.2.1.)

6.3 Tailoring guidance. The contracting activity should tailor any required options offered herein in accordance with Appendix A, Technical Manual Content Selection Matrixes.

6.4 Supersession data. MIL-STD-40051 consolidates, standardizes, and supersedes the requirements contained in the following documents,

MIL-M-63008	—	Manuals, Technical: Acquisition/Preparation Requirements
MIL-M-63014(AV)	—	Manuals, Technical: For Phased Maintenance Checklist
MIL-M-63030(AV)	—	Manuals, Technical: Preventive Maintenance Services and Preventive Maintenance Daily
MIL-STD-361-1	—	Writing Style and Format Requirements.
MIL-STD-361-2	—	Comprehensibility Requirements.
MIL-STD-361-3	—	Requirements for Graphics.
MIL-STD-361-4	—	Quality Assurance Requirements.
MIL-STD-361-5	—	Requirements for Packaging.
MIL-STD-361-6	—	Introductory Information with Theory of Operations Requirements.
MIL-STD-361-7	—	Operator and Preventive Maintenance Instructions.
MIL-STD-361-8	—	Maintenance Instructions.
MIL-STD-361-9	—	Troubleshooting Procedures.
MIL-STD-361-10	—	Lubrication Instructions.
MIL-STD-361-11	—	Repair Parts and Special Tools List (RPSTL).

6.5 Subject term (key word) listing. The following terms are to be used to identify the MIL-STD-40051 series documents during retrieval searches,

Additional authorization list (AAL)
 Basic issue items (BII)
 Basis of issue (BOI)
 CALS raster
 Computer graphics metafile (CGM)
 Components of end item (COEI)
 Depot maintenance work requirement (DMWR)
 Expendable and durable items list
 Illustrations

Initial Graphics Exchange Specification (IGES)
Introductory information
Maintenance allocation chart (MAC)
Maintenance instructions
Operator instructions
Quality assurance (QA)
Repair parts and special tools lists (RPSTL)
Security classification
Standard Generalized Markup Language (SGML)
Supporting information
Theory of operation
Troubleshooting procedures
Work package (WP)
Work package identification number

APPENDIX A
TECHNICAL MANUAL CONTENT SELECTION MATRIXES

A.1 SCOPE

A.1.1 Scope. This appendix contains tables that list all applicable technical content requirements for the development of the following maintenance level technical manuals (TMs). This Appendix is a mandatory part of this standard. The information contained herein is intended for compliance. Copies of the applicable tables will be completed and added as an attachment to the Document Summary List of the contract.

- a. Operator level (-10) TM assembly information.
- b. Unit maintenance level (-20) and unit maintenance level with Repair Parts and Special Tools List (RPSTL) (-20&P) TM assembly information.
- c. Direct support maintenance level (-30) and direct support maintenance level with RPSTL (-30&P) TM assembly information.
- d. General support maintenance level (-40) and general support maintenance level with RPSTL (-40&P) TM assembly information.
- e. Combined operator and unit maintenance levels (-12) and operator and unit maintenance levels with RPSTL (-12&P) TM assembly information.
- f. Combined operator, unit, and direct support maintenance levels (-13) and operator, unit, and direct support maintenance levels with RPSTL (-13&P) TM assembly information.
- g. Combined operator, unit, direct support, and general support maintenance levels (-14) and operator, unit, direct support, and general support maintenance levels with RPSTL (-14&P) TM assembly information.
- h. Combined unit and direct support maintenance levels (-23) and unit and direct support maintenance levels with RPSTL (-23&P) TM assembly information.
- i. Combined unit, direct support, and general support maintenance levels (-24) and unit, direct support, and general support maintenance levels with RPSTL (-24&P) TM assembly information.
- j. Combined direct support and general support maintenance levels (-34) and direct support and general support maintenance levels with RPSTL (-34&P) TM assembly information.
- k. Depot Maintenance Work Requirements (DMWR) and DMWR with RPSTL assembly information.
- l. Aviation Unit Maintenance (AVUM) level (-20) and AVUM level with RPSTL (-20&P) (**aircraft only**) TM assembly information.
- m. Aviation Intermediate Maintenance (AVIM) level (-30) and AVIM level with RPSTL (-30&P) (**aircraft only**) TM assembly information.

- n. Combined AVUM and Aviation Intermediate Maintenance (AVIM) levels (-23) and AVUM and AVIM levels with RPSTL (-23&P) (**aircraft only**) TM assembly information.
- o. All RPSTLs (-P) TM assembly information.
- p. Aircraft troubleshooting manual.
- q. Aircraft preventive maintenance services (PMS).

A.2 APPLICABLE DOCUMENTS.

This section is not applicable to this appendix.

A.3 DEFINITIONS.

This section is not applicable to this appendix.

A.4 GENERAL REQUIREMENTS.

This section is not applicable to this appendix.

A.5 DETAILED REQUIREMENTS.

A.5.1 General. Tables A.1 through A.8 simplify tailoring the technical content requirements of technical manuals prepared using this standard as a guide. The tables indicate which parts of MIL-STD-40051 are applicable and list the content requirements for each type of TM. The content requirements for each applicable TM shall be arranged in the order presented in the tables. Inclusion of the applicable tables of this appendix is mandatory and is intended for compliance.

A.5.2 Intended use. First determine the types of TMs required for each acquisition and then duplicate the table(s) that contain the content requirements for those types of TMs. Indicate the types of TMs needed by filling in the blank after “TM Requirements Matrix for” at the top of each matrix. For each type of TM selected, indicate in the open blocks the “TM Content” desired by entering an “R” for “REQUIRED” content, an “NR” for content that is “NOT REQUIRED”, or an “O” for “OPTIONAL” content that may be required in the TM later by the Government, but can not be determined at the time of the contract. All blocks for the selected TM types in Tables A.1 through A.8 must be completed with an “R” or “NR” or “O” for each TM acquisition.

A.5.3 Acquisition requirements. The properly executed Technical Manual Content Selection Matrix table becomes contractually binding when it is made part of the contract, statement of work or any other contractual instrument.

Table A.1 TM Requirements Matrix for _____

TM Content	-10	-12 -12&P	-13 -13&P	-14 -14&P	MIL-STD-40051 Reference	Element Name	Req'd / Not Req'd
FRONT MATTER	R	R	R	R	1- 5.8.1	<frnt>	
Front cover	R	R	R	R	1- 5.8.1.1	<frntcover>	
Warning summary					1- 5.8.1.2	<warnsum>	
List of effective pages / work packages					1- 5.8.1.3		
Revision transmittal page	R	R	R	R	1-5.8.1.4	<chgsheet>	
Title block page	R	R	R	R	1- 5.8.1.5	<titleblk>	
Table of contents	R	R	R	R	1- 5.8.1.6	<contents>	
How to use this manual					1- 5.8.1.7	<howtouse>	
CHAPTER 1. INTRODUCTORY INFORMATION WITH THEORY OF OPERATION	R	R	R	R	2- 5.1	<gim>	
<i>GENERAL INFORMATION WORK PACKAGE</i>	R	R	R	R	2- 5.1.1	<ginfowp>	
Scope	R	R	R	R	2- 5.1.1.1	<scope>	
Maintenance forms, records, and reports	R	R	R	R	2- 5.1.1.2	<mfrf>	
Reporting equipment improvement recommendations (EIR)	R	R	R	R	2- 5.1.1.3	<eir>	
Hand receipt manuals					2- 5.1.1.4	<handreceipt>	
Corrosion prevention and control (CPC)	R	R	R	R	2- 5.1.1.5	<cpcdata>	
Destruction of Army materiel to prevent enemy use	R	R	R	R	2- 5.1.1.6	<destructmat>	
Preparation for storage or shipment	R	R	R	R	2- 5.1.1.7	<pssref>	
Warranty information					2- 5.1.1.8	<wrntyref>	
Nomenclature cross-reference list					2- 5.1.1.9	<nomenreflist>	
List of abbreviations					2- 5.1.1.10	<loa>	
Quality assurance (QA) (aviation only)					2- 5.1.1.11	<qainfo>	

Table A.1 TM Requirements Matrix for _____

TM Content	-10	-12 -12&P	-13 -13&P	-14 -14&P	MIL-STD-40051 Reference	Element Name	Req'd / Not Req'd
Safety, care, and handling					2- 5.1.1.12	<sftyinfo>	
Nuclear hardness					2- 5.1.1.13	<hcp>	
Security measures for electronic data					2- 5.1.1.14	<secref>	
Calibration					2- 5.1.1.15	<calref>	
Copyright credit line					2- 5.1.1.19	<copyrt>	
<i>EQUIPMENT DESCRIPTION AND DATA WORK PACKAGE</i>	R	R	R	R	2- 5.1.3	<descwp>	
Equipment characteristics, capabilities, and features	R	R	R	R	2- 5.1.3.1	<eqpinfo>	
Location and description of major components	R	R	R	R	2- 5.1.3.2	<locdesc>	
Differences between models					2- 5.1.3.3	<eqpdiff>	
Equipment data	R	R	R	R	2- 5.1.3.4	<eqpdata>	
Equipment configuration					2- 5.1.3.5	<eqpconfig>	
<i>THEORY OF OPERATION WORK PACKAGE</i>	R	R	R	R	2- 5.1.4	<thrywp>	
<i>SUPPORTING DATA WORK PACKAGE FOR REPAIR PARTS, SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT</i>					2- 5.1.5	<supdatawp>	
CHAPTER X. OPERATOR INSTRUCTIONS	R	R	R	R	3- 5.1	<opim>	
<i>DESCRIPTION AND USE OF OPERATOR CONTROLS AND INDICATORS WORK PACKAGE</i>	R	R	R	R	3- 5.1.1	<ctrlindwp>	
<i>OPERATION UNDER USUAL CONDITIONS WORK PACKAGE</i>	R	R	R	R	3- 5.1.2	<opusualwp>	
Siting requirements					3- 5.1.2.2	<site>	
Shelter requirements					3- 5.1.2.3	<shelter>	
Assembly and preparation for use					3- 5.1.2.4	<assem>	
Initial adjustments, before use and self-test					3- 5.1.2.5	<initial>	
Operating procedures	R	R	R	R	3- 5.1.2.6	<oper>	

Table A.1 TM Requirements Matrix for _____

TM Content	-10	-12 -12&P	-13 -13&P	-14 -14&P	MIL-STD-40051 Reference	Element Name	Req'd / Not Req'd
Decals and instruction plates					3- 5.1.2.6.3	<instructplt>	
Operating auxiliary equipment					3- 5.1.2.7	<operaux>	
Preparation for movement					3- 5.1.2.8	<prepmove>	
<i>OPERATION UNDER UNUSUAL CONDITIONS WORK PACKAGE</i>	R	R	R	R	3- 5.1.3	<opunuwp>	
Unusual environment / weather					3- 5.1.3.2	<unusualenv>	
Fording and swimming					3- 5.1.3.3	<fording>	
Interim nuclear, biological, and chemical (NBC) decontamination procedures					3- 5.1.3.4	<decon>	
Jamming and electronic countermeasures (ECM) procedures					3- 5.1.3.5	<ecm>	
Emergency procedures					3- 5.1.3.6	<emergency>	
CHAPTER X. TROUBLESHOOTING PROCEDURES		R	R	R	4- 5.4	<tim>	
<i>INTRODUCTION WORK PACKAGE</i>		R	R	R	4- 5.5.1	<tsintrowp>	
<i>MALFUNCTION / SYMPTOM INDEX WORK PACKAGE</i>					4- 5.5.2	<symndxwp>	
<i>TROUBLESHOOTING PROCEDURES WORK PACKAGE</i>		R	R	R	4- 5.5.4	<tswp>	
CHAPTER X. MAINTENANCE INSTRUCTIONS NOTE All maintenance work packages shall include a scope of task, initial setup, and all maintenance tasks applicable to the equipment.	R	R	R	R	5- 5.3	<mim>	
<i>SERVICE UPON RECEIPT WORK PACKAGE</i>	NR	R	R	R	5- 5.4.5.1	<surwp>	
Siting					5- 5.4.5.1.1	<siting>	
Shelter requirements					5- 5.4.5.1.2	<shltr>	
Service upon receipt of materiel					5- 5.4.5.1.3	<surmat>	

Table A.1 TM Requirements Matrix for _____

TM Content	-10	-12 -12&P	-13 -13&P	-14 -14&P	MIL-STD-40051 Reference	Element Name	Req'd / Not Req'd
Installation instructions					5- 5.4.5.1.4	<install>	
Preliminary servicing of equipment					5- 5.4.5.1.5	<preserv>	
Preliminary checks and adjustment of equipment					5- 5.4.5.1.6	<prechkadj>	
Preliminary calibration of equipment					5- 5.4.5.1.7	<precal>	
Circuit alignment					5- 5.4.5.1.8	<calign>	
Ammunition markings					5- 5.4.5.1.9	<markings>	
Classification of defects					5- 5.4.5.1.10	<defect>	
Ammunition handling					5- 5.4.5.1.11	<handling>	
Procedures to activate ammunition					5- 5.4.5.1.12	<arm>	
<i>EQUIPMENT / USER FITTING INSTRUCTIONS WORK PACKAGE</i> (personal use equipment)	NR				5- 5.4.5.2	<perseqpwp>	
<i>PMCS, INCLUDING LUBRICATION INSTRUCTIONS, WORK PACKAGE</i>	R	R	R	R	5- 5.4.5.3	<pmcswp>	
Introduction	R	R	R	R	5- 5.4.5.3.1	<pmcsintro>	
PMCS procedures (table)	R	R	R	R	5- 5.4.5.3.2	<pmcstable>	
<i>MAINTENANCE WORK PACKAGES</i> NOTE As applicable, the following maintenance tasks shall be presented in the general order listed below:	R	R	R	R	5- 5.4.5.8	<maintwp>	
Assembly and preparation for use (aviation only)					5- 5.4.5.8.1.3	<assem>	
Servicing					5- 5.4.5.8.1.4	<service>	
Ground handling					5- 5.4.5.8.1.5	<groundtsk>	
Operational check					5- 5.4.5.8.1.6	<opchk>	
Inspection of installed items					5- 5.4.5.8.1	<inspinstitm>	
Removal					5- 5.4.5.8.1	<remove>	
Disassembly					5- 5.4.5.8.1	<disassem>	

Table A.1 TM Requirements Matrix for _____

TM Content	-10	-12 -12&P	-13 -13&P	-14 -14&P	MIL-STD-40051 Reference	Element Name	Req'd / Not Req'd
Cleaning					5- 5.4.5.8.1	<clean>	
Inspection - acceptance and rejection criteria					5- 5.4.5.8.1.7	<acptrejinsp>	
Nondestructive testing inspection (NDTI)					5- 5.4.5.8.1.8	<ndti>	
Repair or replacement					5- 5.4.5.8.1.9	<repair-rplc>	
Alignment					5- 5.4.5.8.1	<align>	
Painting					5- 5.4.5.8.1	<paint>	
Lubrication					5- 5.4.5.8.1	<lube>	
Assembly					5- 5.4.5.8.1	<assem>	
Test and inspection					5- 5.4.5.8.1.10	<test-inspect>	
Installation					5- 5.4.5.8.1	<install>	
Adjustment					5- 5.4.5.8.1	<adjust>	
Calibration					5- 5.4.5.8.1	<calibration>	
Radio interference suppression					5- 5.4.5.8.1	<ris>	
Placing in service					5- 5.4.5.8.1.11	<pis>	
Testing					5- 5.4.5.8.1.12	<test-pass>	
Preparation for storage or shipment					5- 5.4.5.8.1.16	<pss>	
Classification of defects					5- 5.4.5.8.1.17	<defect>	
Handling ammunition					5- 5.4.5.8.1.18	<handling>	
Ammunition markings					5- 5.4.5.8.1	<marking>	
Procedures for ammunition activation					5- 5.4.5.8.1.19	<arm>	
<i>AMMUNITION MAINTENANCE WORK PACKAGE</i>					5- 5.4.5.6	<ammowp>	
<i>AUXILIARY EQUIPMENT MAINTENANCE WORK PACKAGE</i>					5- 5.4.5.7	<auxeqpwp>	

Table A.1 TM Requirements Matrix for _____

TM Content	-10	-12 -12&P	-13 -13&P	-14 -14&P	MIL-STD-40051 Reference	Element Name	Req'd / Not Req'd
CHAPTER X. SUPPORTING INFORMATION NOTE Applicable supporting information work packages shall be arranged in the order in which they are presented here and numbered accordingly.	R	R	R	R	7- 5.1	<sim>	
<i>REFERENCES</i>	R	R	R	R	7- 5.2	<refwp>	
<i>MAC</i>	NR	R	R	R	7- 5.3	<macwp>	
<i>RPSTL</i> (-10 through -14)	NR	NR	NR	NR	7- 5.4	<rpstlwp>	
(-12&P through -14&P)		R	R	R			
<i>COMPONENTS OF END ITEM (COEI) AND BASIC ISSUE ITEMS (BII) LISTS</i>	R	R	R	R	7- 5.5	<coeibiiwp>	
<i>ADDITIONAL AUTHORIZATION LIST (AAL)</i>					7- 5.6	<aalwp>	
<i>EXPENDABLE AND DURABLE ITEMS LIST</i>					7- 5.7	<explistwp>	
<i>STOWAGE AND DECAL / DATA PLATE GUIDE</i>					7- 5.8	<stowagewp>	
<i>ON-VEHICLE EQUIPMENT LOADING PLAN</i>					7- 5.9	<eqploadwp>	
<i>TOOL IDENTIFICATION LIST</i>	NR				7- 5.10	<toolidwp>	
<i>ILLUSTRATED LIST OF MANUFACTURED ITEMS</i>	NR				7- 5.11	<manuwp>	
<i>TORQUE LIMITS</i>	NR				7- 5.12	<torquewp>	
<i>MANDATORY REPLACEMENT PARTS</i>	NR				7- 5.13	<mrplwp>	
<i>AMMUNITION MARKING INFORMATION</i>	NR				7- 5.14	<ammowp>	
<i>FOREIGN AMMUNITION (NATO)</i>	NR				7- 5.15	<natowp>	
<i>WIRING DIAGRAMS</i>	NR				7- 5.22	<wiringwp>	
<i>ADDITIONAL SUPPORTING WORK PACKAGES</i>					7- 5.23	<genwp>	

Table A.1 TM Requirements Matrix for _____

TM Content	-10	-12 -12&P	-13 -13&P	-14 -14&P	MIL-STD-40051 Reference	Element Name	Req'd / Not Req'd
REAR MATTER	R	R	R	R	1- 5.8.2	<rear>	
Glossary					1- 5.8.2.1	<glossary>	
Alphabetical index					1- 5.8.2.2	<aindx>	
Foldout pages					1- 5.8.2.3	<foldsect>	
DA Form 2028	R	R	R	R	1- 5.8.2.4	<da2028>	
Authentication page	R	R	R	R	1- 5.8.2.5	<authent>	
Back cover	R	R	R	R	1- 5.8.2.6	<back>	

Table A.2 TM Requirements Matrix for _____

TM Content	-20 -20&P	-30 -30&P	-40 -40&P	MIL-STD-40051 Reference	Element Name	Req'd / Not Req'd
FRONT MATTER	R	R	R	1- 5.8.1	<frnt>	
Front cover	R	R	R	1- 5.8.1.1	<frntcover>	
Warning summary				1- 5.8.1.2	<warnsum>	
List of effective pages / work packages				1- 5.8.1.3		
Revision transmittal page	R	R	R	1-5.8.1.4	<chgsheet>	
Title block page	R	R	R	1- 5.8.1.5	<titleblk>	
Table of contents	R	R	R	1- 5.8.1.6	<contents>	
How to use this manual				1- 5.8.1.7	<howtouse>	
CHAPTER 1. INTRODUCTORY INFORMATION WITH THEORY OF OPERATION	R	R	R	2- 5.1	<gim>	
<i>GENERAL INFORMATION WORK PACKAGE</i>	R	R	R	2- 5.1.1	<ginfowp>	
Scope	R	R	R	2- 5.1.1.1	<scope>	
Maintenance forms, records, and reports	R	R	R	2- 5.1.1.2	<mfrf>	
Reporting equipment improvement recommendations (EIR)	R	R	R	2- 5.1.1.3	<eir>	
Hand receipt manuals				2- 5.1.1.4	<handreceipt>	
Corrosion prevention and control (CPC)	R	R	R	2- 5.1.1.5	<cpcdata>	
Destruction of Army materiel to prevent enemy use	R	R	R	2- 5.1.1.6	<destructmat>	
Preparation for storage or shipment	R	R	R	2- 5.1.1.7	<pssref>	
Warranty information				2- 5.1.1.8	<wrntyref>	
Nomenclature cross-reference list				2- 5.1.1.9	<nomenreflist>	
List of abbreviations				2- 5.1.1.10	<loa>	
Quality assurance (QA) (aviation only)				2- 5.1.1.11	<qainfo>	

Table A.2 TM Requirements Matrix for _____

TM Content	-20 -20&P	-30 -30&P	-40 -40&P	MIL-STD-40051 Reference	Element Name	Req'd / Not Req'd
Safety, care, and handling				2- 5.1.1.12	<sftyinfo>	
Nuclear hardness				2- 5.1.1.13	<hcp>	
Security measures for electronic data				2- 5.1.1.14	<secref>	
Calibration				2- 5.1.1.15	<calref>	
Copyright credit line				2- 5.1.1.19	<copyrt>	
<i>EQUIPMENT DESCRIPTION AND DATA WORK PACKAGE</i>	R	R	R	2- 5.1.3	<descwp>	
Equipment characteristics, capabilities, and features				2- 5.1.3.1	<eqpinfo>	
Location and description of major components				2- 5.1.3.2	<locdesc>	
Differences between models				2- 5.1.3.3	<eqpdiff>	
Equipment data				2- 5.1.3.4	<eqpdata>	
Equipment configuration				2- 5.1.3.5	<eqpconfig>	
<i>THEORY OF OPERATION WORK PACKAGE</i>				2- 5.1.4	<thrywp>	
<i>SUPPORTING DATA WORK PACKAGE FOR REPAIR PARTS, SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT</i>	R	R	R	2- 5.1.5	<supdatawp>	
CHAPTER X. TROUBLESHOOTING PROCEDURES	R	R	R	4- 5.4	<tim>	
<i>INTRODUCTION WORK PACKAGE</i>	R	R	R	4- 5.5.1	<tsintrowp>	
<i>MALFUNCTION / SYMPTOM INDEX WORK PACKAGE</i>				4- 5.5.2	<symndxwp>	
<i>TROUBLESHOOTING PROCEDURES WORK PACKAGE</i>	R	R	R	4- 5.5.3	<tswp>	

Table A.2 TM Requirements Matrix for _____

TM Content	-20 -20&P	-30 -30&P	-40 -40&P	MIL-STD-40051 Reference	Element Name	Req'd / Not Req'd
CHAPTER X. MAINTENANCE INSTRUCTIONS NOTE All maintenance work packages shall include a scope of task, initial setup, and all maintenance tasks applicable to the equipment.	R	R	R	5- 5.3	<mim>	
<i>SERVICE UPON RECEIPT WORK PACKAGE</i>	R	NR	NR	5- 5.4.5.1	<surwp>	
Siting				5- 5.4.5.1.1	<siting>	
Shelter requirements				5- 5.4.5.1.2	<shltr>	
Service upon receipt of materiel				5- 5.4.5.1.3	<surmat>	
Installation instructions				5- 5.4.5.1.4	<install>	
Preliminary servicing of equipment				5- 5.4.5.1.5	<preserv>	
Preliminary checks and adjustment of equipment				5- 5.4.5.1.6	<prechkadj>	
Preliminary calibration of equipment				5- 5.4.5.1.7	<precal>	
Circuit alignment				5- 5.4.5.1.8	<calign>	
Ammunition markings				5- 5.4.5.1.9	<markings>	
Classification of defects				5- 5.4.5.1.10	<defect>	
Ammunition handling				5- 5.4.5.1.11	<handling>	
Procedures to activate ammunition				5- 5.4.5.1.12	<arm>	
<i>EQUIPMENT / USER FITTING INSTRUCTIONS WORK PACKAGE</i> (personal use equipment)				5- 5.4.5.2	<perseqpwp>	
<i>PMCS, INCLUDING LUBRICATION INSTRUCTIONS, WORK PACKAGE</i>	R	R	R	5- 5.4.5.3	<pmcswp>	
Introduction	R	R	R	5- 5.4.5.3.1	<pmcsintro>	
PMCS procedures (table)	R	R	R	5- 5.4.5.3.2	<pmcstable>	

Table A.2 TM Requirements Matrix for _____

TM Content	-20 -20&P	-30 -30&P	-40 -40&P	MIL-STD-40051 Reference	Element Name	Req'd / Not Req'd
MAINTENANCE WORK PACKAGES NOTE As applicable, the following maintenance tasks shall be presented in the general order listed below:	R	R	R	5- 5.4.5.8	<maintwp>	
Assembly and preparation for use (aviation only)				5- 5.4.5.8.1.3	<assem>	
Servicing				5- 5.4.5.8.1.4	<service>	
Ground handling				5- 5.4.5.8.1.5	<groundtsk>	
Operational check				5- 5.4.5.8.1.6	<opchk>	
Inspection of installed items				5- 5.4.5.8.1	<inspinstitm>	
Removal				5- 5.4.5.8.1	<remove>	
Disassembly				5- 5.4.5.8.1	<disassem>	
Cleaning				5- 5.4.5.8.1	<clean>	
Inspection - acceptance and rejection criteria				5- 5.4.5.8.1.7	<acptrejinsp>	
Nondestructive testing inspection (NDTI)				5- 5.4.5.8.1.8	<ndti>	
Repair or replacement				5- 5.4.5.8.1.9	<repair-rplc>	
Alignment				5- 5.4.5.8.1	<align>	
Painting				5- 5.4.5.8.1	<paint>	
Lubrication				5- 5.4.5.8.1	<lube>	
Assembly				5- 5.4.5.8.1	<assem>	
Test and inspection				5- 5.4.5.8.1.10	<test-inspect>	
Installation				5- 5.4.5.8.1	<install>	
Adjustment				5- 5.4.5.8.1	<adjust>	
Calibration				5- 5.4.5.8.1	<calibration>	
Radio interference suppression				5- 5.4.5.8.1	<ris>	
Placing in service				5- 5.4.5.8.1.11	<pis>	
Testing				5- 5.4.5.8.1.12	<test-pass>	
Preparation for storage or shipment				5- 5.4.5.8.1.16	<pss>	

Table A.2 TM Requirements Matrix for _____

TM Content	-20 -20&P	-30 -30&P	-40 -40&P	MIL-STD-40051 Reference	Element Name	Req'd / Not Req'd
Classification of defects				5- 5.4.5.8.1.17	<defect>	
Handling ammunition				5- 5.4.5.8.1.18	<handling>	
Ammunition markings				5- 5.4.5.8.1	<marking>	
Procedures for ammunition activation				5- 5.4.5.8.1.19	<arm>	
<i>AMMUNITION MAINTENANCE WORK PACKAGE</i>				5- 5.4.5.6	<ammowp>	
<i>AUXILIARY EQUIPMENT MAINTENANCE WORK PACKAGE</i>				5- 5.4.5.7	<auxeqwp>	
CHAPTER X. SUPPORTING INFORMATION NOTE Applicable supporting information work packages shall be arranged in the order in which they are presented here and numbered accordingly.	R	R	R	7- 5.1	<sim>	
<i>REFERENCES</i>	R	R	R	7- 5.2	<refwp>	
<i>MAC</i>	R	NR	NR	7- 5.3	<macwp>	
<i>RPSTL</i> (-20 through -40) (-20&P through -40&P)	NR R	NR R	NR R	7- 5.4	<rpstlwp>	
<i>EXPENDABLE AND DURABLE ITEMS LIST</i>				7- 5.7	<explistwp>	
<i>TOOL IDENTIFICATION LIST</i>				7- 5.10	<toolidwp>	
<i>ILLUSTRATED LIST OF MANUFACTURED ITEMS</i>				7- 5.11	<manuwp>	
<i>TORQUE LIMITS</i>				7- 5.12	<torquewp>	
<i>MANDATORY REPLACEMENT PARTS</i>				7- 5.13	<mrplwp>	
<i>AMMUNITION MARKING INFORMATION</i>				7- 5.14	<ammowp>	
<i>FOREIGN AMMUNITION (NATO)</i>				7- 5.15	<natowp>	
<i>WIRING DIAGRAMS</i>				7- 5.22	<wiringwp>	

Table A.2 TM Requirements Matrix for _____

TM Content	-20 -20&P	-30 -30&P	-40 -40&P	MIL-STD-40051 Reference	Element Name	Req'd / Not Req'd
<i>ADDITIONAL SUPPORTING WORK PACKAGES</i>				7- 5.23	<genwp>	
REAR MATTER	R	R	R	1- 5.8.2	<rear>	
Glossary				1- 5.8.2.1	<glossary>	
Alphabetical index				1- 5.8.2.2	<aindx>	
Foldout pages				1- 5.8.2.3	<foldsect>	
DA Form 2028	R	R	R	1- 5.8.2.4	<da2028>	
Authentication page	R	R	R	1- 5.8.2.5	<authent>	
Back cover	R	R	R	1- 5.8.2.6	<back>	

Table A.3 TM Requirements Matrix for _____

TM Content	-23 -23&P	-24 -24&P	-34 -34&P	MIL-STD-40051 Reference	Element Name	Req'd / Not Req'd
FRONT MATTER	R	R	R		<frnt>	
Front cover	R	R	R	1 - 5.8.1.1	<frntcover>	
Warning summary				1 - 5.8.1.2	<warnsum>	
List of effective pages / work packages				1 - 5.8.1.3		
Revision transmittal page	R	R	R	1 - 5.8.1.4	<chgsheet>	
Title block page	R	R	R	1 - 5.8.1.5	<titleblk>	
Table of contents	R	R	R	1 - 5.8.1.6	<contents>	
How to use this manual				1 - 5.8.1.7	<howtouse>	
CHAPTER 1. INTRODUCTORY INFORMATION WITH THEORY OF OPERATION	R	R	R	2 - 5.1	<gim>	
<i>GENERAL INFORMATION WORK PACKAGE</i>	R	R	R	2 - 5.1.1	<ginfowp>	
Scope	R	R	R	2 - 5.1.1.1	<scope>	
Maintenance forms, records, and reports	R	R	R	2 - 5.1.1.2	<mfr>	
Reporting equipment improvement recommendations (EIR)	R	R	R	2 - 5.1.1.3	<eir>	
Hand receipt manuals				2 - 5.1.1.4	<handreceipt>	
Corrosion prevention and control (CPC)	R	R	R	2 - 5.1.1.5	<cpdata>	
Destruction of Army materiel to prevent enemy use	R	R	R	2 - 5.1.1.6	<destructmat>	
Preparation for storage or shipment	R	R	R	2 - 5.1.1.7	<pssref>	
Warranty information				2 - 5.1.1.8	<wrntyref>	
Nomenclature cross-reference list				2 - 5.1.1.9	<nomenreflist>	
List of abbreviations				2 - 5.1.1.10	<loa>	
Quality assurance (QA) (aviation only)				2 - 5.1.1.11	<qainfo>	

Table A.3 TM Requirements Matrix for _____

TM Content	-23 -23&P	-24 -24&P	-34 -34&P	MIL-STD-40051 Reference	Element Name	Req'd / Not Req'd
Safety, care, and handling				2 - 5.1.1.12	<sftyinfo>	
Nuclear hardness				2 - 5.1.1.13	<hcp>	
Security measures for electronic data				2 - 5.1.1.14	<secrref>	
Calibration				2 - 5.1.1.15	<calref>	
Copyright credit line				2 - 5.1.1.19	<copyrt>	
<i>EQUIPMENT DESCRIPTION AND DATA WORK PACKAGE</i>	R	R	R	2 - 5.1.3	<descwp>	
Equipment characteristics, capabilities, and features	R	R	R	2 - 5.1.3.1	<eqpinfo>	
Location and description of major components	R	R	R	2 - 5.1.3.2	<locdesc>	
Differences between models				2 - 5.1.3.3	<eqpdiff>	
Equipment data	R	R	R	2 - 5.1.3.4	<eqpdata>	
Equipment configuration	R	R	R	2 - 5.1.3.5	<eqpconfig>	
<i>THEORY OF OPERATION WORK PACKAGE</i>	R	R	R	2 - 5.1.4	<thrywp>	
<i>SUPPORTING DATA WORK PACKAGE FOR REPAIR PARTS, SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT</i>	R	R	R	2 - 5.1.5	<supdatawp>	
CHAPTER X. TROUBLESHOOTING PROCEDURES	R	R	R	4 - 5.4	<tim>	
<i>INTRODUCTION WORK PACKAGE</i>	R	R	R	4 - 5.5.1	<tsintrowp>	
<i>MALFUNCTION / SYMPTOM INDEX WORK PACKAGE</i>				4 - 5.5.2	<symndxwp>	
<i>TROUBLESHOOTING PROCEDURES WORK PACKAGE</i>	R	R	R	4 - 5.5.3	<tswp>	

Table A.3 TM Requirements Matrix for _____

TM Content	-23 -23&P	-24 -24&P	-34 -34&P	MIL-STD-40051 Reference	Element Name	Req'd / Not Req'd
CHAPTER X. MAINTENANCE INSTRUCTIONS NOTE All maintenance work packages shall include a scope of task, initial setup, and all maintenance tasks applicable to the equipment.	R	R	R	5 - 5.3	<mim>	
<i>SERVICE UPON RECEIPT WORK PACKAGE</i>	R	R	NR	5 - 5.4.5.1	<surwp>	
Siting			NR	5 - 5.4.5.1.1	<siting>	
Shelter requirements			NR	5 - 5.4.5.1.2	<shltr>	
Service upon receipt of materiel			NR	5 - 5.4.5.1.3	<surmat>	
Installation instructions			NR	5 - 5.4.5.1.4	<install>	
Preliminary servicing of equipment			NR	5 - 5.4.5.1.5	<preserv>	
Preliminary checks and adjustment of equipment			NR	5 - 5.4.5.1.6	<prechkadj>	
Preliminary calibration of equipment			NR	5 - 5.4.5.1.7	<precal>	
Circuit alignment			NR	5 - 5.4.5.1.8	<calign>	
Ammunition markings			NR	5 - 5.4.5.1.9	<markings>	
Classification of defects			NR	5 - 5.4.5.1.10	<defect>	
Ammunition handling			NR	5 - 5.4.5.1.11	<handling>	
Procedures to activate ammunition			NR	5 - 5.4.5.1.12	<arm>	
<i>EQUIPMENT / USER FITTING INSTRUCTIONS WORK PACKAGE</i> (personal use equipment)				5 - 5.4.5.2	<perseqpwp>	
<i>PMCS, INCLUDING LUBRICATION INSTRUCTIONS, WORK PACKAGE</i>	R	R	R	5 - 5.4.5.3	<pmcswp>	
Introduction	R	R	R	5 - 5.4.5.3.1	<pmcsintro>	
PMCS procedures (table)	R	R	R	5 - 5.4.5.3.2	<pmcstable>	

Table A.3 TM Requirements Matrix for _____

TM Content	-23 -23&P	-24 -24&P	-34 -34&P	MIL-STD-40051 Reference	Element Name	Req'd / Not Req'd
MAINTENANCE WORK PACKAGES NOTE As applicable, the following maintenance tasks shall be presented in the general order listed below:	R	R	R	5 - 5.4.5.8	<maintwp>	
Assembly and preparation for use (aviation only)				5 - 5.4.5.8.1.3	<assem>	
Servicing				5 - 5.4.5.8.1.4	<service>	
Ground handling				5 - 5.4.5.8.1.5	<groundtsk>	
Operational check				5 - 5.4.5.8.1.6	<opchk>	
Inspection of installed items				5 - 5.4.5.8.1	<inspinstitm>	
Removal				5 - 5.4.5.8.1	<remove>	
Disassembly				5 - 5.4.5.8.1	<disassem>	
Cleaning				5 - 5.4.5.8.1	<clean>	
Inspection - acceptance and rejection criteria				5 - 5.4.5.8.1.7	<acptrejinsp>	
Nondestructive testing inspection (NDTI)				5 - 5.4.5.8.1.8	<ndti>	
Repair or replacement				5 - 5.4.5.8.1.9	<repair-rplc>	
Alignment				5 - 5.4.5.8.1	<align>	
Painting				5 - 5.4.5.8.1	<paint>	
Lubrication				5 - 5.4.5.8.1	<lube>	
Assembly				5 - 5.4.5.8.1	<assem>	
Test and inspection				5 - 5.4.5.8.10	<test-inspect>	
Installation				5 - 5.4.5.8.1	<install>	
Adjustment				5 - 5.4.5.8.1	<adjust>	
Calibration				5 - 5.4.5.8.1	<calibration>	
Radio interference suppression				5 - 5.4.5.8.1	<ris>	
Placing in service				5 - 5.4.5.8.11	<pis>	
Testing				5 - 5.4.5.8.12	<test-pass>	
Preparation for storage or shipment				5 - 5.4.5.8.16	<pss>	

Table A.3 TM Requirements Matrix for _____

TM Content	-23 -23&P	-24 -24&P	-34 -34&P	MIL-STD-40051 Reference	Element Name	Req'd / Not Req'd
Classification of defects				5 - 5.4.5.8.17	<defect>	
Handling ammunition				5 - 5.4.5.8.18	<handling>	
Ammunition markings				5 - 5.4.5.8.1	<marking>	
Procedures for ammunition activation				5 - 5.4.5.8.19	<arm>	
<i>AMMUNITION MAINTENANCE WORK PACKAGE</i>				5 - 5.4.5.6	<ammowp>	
<i>AUXILIARY EQUIPMENT MAINTENANCE WORK PACKAGE</i>				5 - 5.4.5.7	<auxeqwp>	
CHAPTER X. SUPPORTING INFORMATION NOTE Applicable supporting information work packages shall be arranged in the order in which they are presented here and numbered accordingly.	R	R	R	7 - 5.1	<sim>	
<i>REFERENCES</i>	R	R	R	7 - 5.2	<refwp>	
<i>MAC</i>	R	R	NR	7 - 5.3	<macwp>	
<i>RPSTL</i> (-23, -24, -34)	NR	NR	NR	7 - 5.4	<rpstlwp>	
(-23&P, -24&P, -34&P)	R	R	R			
<i>EXPENDABLE AND DURABLE ITEMS LIST</i>				7 - 5.7	<explistwp>	
<i>TOOL IDENTIFICATION LIST</i>				7 - 5.10	<toolidwp>	
<i>ILLUSTRATED LIST OF MANUFACTURED ITEMS</i>				7 - 5.11	<manuwp>	
<i>TORQUE LIMITS</i>				7 - 5.12	<torquewp>	
<i>MANDATORY REPLACEMENT PARTS</i>				7 - 5.13	<mrplwp>	
<i>AMMUNITION MARKING INFORMATION</i>				7 - 5.14	<ammowp>	
<i>WIRING DIAGRAMS</i>				7 - 5.22	<wiringwp>	
<i>ADDITIONAL SUPPORTING WORK PACKAGES</i>				7 - 5.23	<genwp>	

Table A.3 TM Requirements Matrix for _____

TM Content	-23 -23&P	-24 -24&P	-34 -34&P	MIL-STD-40051 Reference	Element Name	Req'd / Not Req'd
REAR MATTER	R	R	R	1 - 5.8.2	<rear>	
Glossary				1 - 5.8.2.1	<glossary>	
Alphabetical index				1 - 5.8.2.2	<aindx>	
Foldout pages				1 - 5.8.2.3	<foldsect>	
DA Form 2028	R	R	R	1 - 5.8.2.4	<da2028>	
Authentication page	R	R	R	1 - 5.8.2.5	<authent>	
Back cover	R	R	R	1 - 5.8.2.6	<back>	

Table A.4 TM Requirements Matrix for _____

TM Content	AVUM -20 -20&P	AVIM -30 -30&P	AVUM/ AVIM -23 -23&P	MIL-STD-40051 Reference	Element Name	Req'd / Not Req'd
FRONT MATTER	R	R	R	1 - 5.8.1	<frnt>	
Front cover	R	R	R	1 - 5.8.1.1	<frntcover>	
Warning summary				1 - 5.8.1.2	<warnsum>	
List of effective pages / work packages				1 - 5.8.1.3		
Revision transmittal page	R	R	R	1 - 5.8.1.4	<chgsheet>	
Title block page	R	R	R	1 - 5.8.1.5	<titleblk>	
Table of contents	R	R	R	1 - 5.8.1.6	<contents>	
How to use this manual				1 - 5.8.1.7	<howtouse>	
CHAPTER 1. INTRODUCTORY INFORMATION WITH THEORY OF OPERATION	R	R	R	2 - 5.1	<gim>	
<i>GENERAL INFORMATION WORK PACKAGE</i>	R	R	R	2 - 5.1.1	<ginfowp>	
Scope	R	R	R	2 - 5.1.1.1	<scope>	
Maintenance forms, records, and reports	R	R	R	2 - 5.1.1.2	<mfr>	
Reporting equipment improvement recommendations (EIR)	R	R	R	2 - 5.1.1.3	<eir>	
Hand receipt manuals				2 - 5.1.1.4	<handreceipt>	
Corrosion prevention and control (CPC)	R	R	R	2 - 5.1.1.5	<cpdata>	
Destruction of Army materiel to prevent enemy use	R	R	R	2 - 5.1.1.6	<destructmat>	
Preparation for storage or shipment	R	R	R	2 - 5.1.1.7	<pssref>	
Warranty information	R	R	R	2 - 5.1.1.8	<wrntyref>	
Nomenclature cross-reference list				2 - 5.1.1.9	<nomenreflist>	
List of abbreviations				2 - 5.1.1.10	<loa>	
Quality assurance (QA) (aviation only)				2 - 5.1.1.11	<qainfo>	

Table A.4 TM Requirements Matrix for _____

TM Content	AVUM -20 -20&P	AVIM -30 -30&P	AVUM/ AVIM -23 -23&P	MIL-STD-40051 Reference	Element Name	Req'd / Not Req'd
Safety, care, and handling				2 - 5.1.1.12	<sftyinfo>	
Nuclear hardness				2 - 5.1.1.13	<hcp>	
Security measures for electronic data				2 - 5.1.1.14	<secrref>	
Calibration				2 - 5.1.1.15	<calref>	
Copyright credit line				2 - 5.1.1.19	<copyrt>	
<i>EQUIPMENT DESCRIPTION AND DATA WORK PACKAGE</i>	R	R	R	2 - 5.1.3	<descwp>	
Equipment characteristics, capabilities, and features				2 - 5.1.3.1	<eqpinfo>	
Location and description of major components				2 - 5.1.3.2	<locdesc>	
Differences between models				2 - 5.1.3.3	<eqpdiff>	
Equipment data				2 - 5.1.3.4	<eqpdata>	
Equipment configuration				2 - 5.1.3.5	<eqpconfig>	
<i>THEORY OF OPERATION WORK PACKAGE</i>				2 - 5.1.4	<thrywp>	
<i>SUPPORTING DATA WORK PACKAGE FOR REPAIR PARTS, SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT</i>	R	R	R	2 - 5.1.5	<supdatawp>	
CHAPTER X. TROUBLESHOOTING PROCEDURES	R	R	R	4 - 5.4	<tim>	
<i>INTRODUCTION WORK PACKAGE</i>	R	R	R	4 - 5.5.1	<tsintrowp>	
<i>MALFUNCTION / SYMPTOM INDEX WORK PACKAGE</i>				4 - 5.5.2	<symndxwp>	
<i>TROUBLESHOOTING PROCEDURES WORK PACKAGE</i>	R	R	R	4 - 5.5.3	<tswp>	

Table A.4 TM Requirements Matrix for _____

TM Content	AVUM -20 -20&P	AVIM -30 -30&P	AVUM/ AVIM -23 -23&P	MIL-STD-40051 Reference	Element Name	Req'd / Not Req'd
CHAPTER X. MAINTENANCE INSTRUCTIONS NOTE All maintenance work packages shall include a scope of task, initial setup, and all maintenance tasks applicable to the equipment.	R	R	R	5 - 5.3	<mim>	
<i>SERVICE UPON RECEIPT WORK PACKAGE</i>	R	NR	R	5 - 5.4.5.1	<surwp>	
Siting				5 - 5.4.5.1.1	<siting>	
Shelter requirements				5 - 5.4.5.1.2	<shltr>	
Service upon receipt of materiel				5 - 5.4.5.1.3	<surmat>	
Installation instructions				5 - 5.4.5.1.4	<install>	
Preliminary servicing of equipment				5 - 5.4.5.1.5	<preserv>	
Preliminary checks and adjustment of equipment				5 - 5.4.5.1.6	<prechkadj>	
Preliminary calibration of equipment				5 - 5.4.5.1.7	<precal>	
Circuit alignment				5 - 5.4.5.1.8	<calign>	
Ammunition markings				5 - 5.4.5.1.9	<markings>	
Classification of defects				5 - 5.4.5.1.10	<defect>	
Ammunition handling				5 - 5.4.5.1.11	<handling>	
Procedures to activate ammunition				5 - 5.4.5.1.12	<arm>	
<i>EQUIPMENT / USER FITTING INSTRUCTIONS WORK PACKAGE</i> (personal use equipment)				5 - 5.4.5.2	<perseqpwp>	
<i>PMCS, INCLUDING LUBRICATION INSTRUCTIONS, WORK PACKAGE</i>	R	R	R	5 - 5.4.5.3	<pmcswp>	
Introduction	R	R	R	5 - 5.4.5.3.1	<pmcsintro>	
PMCS procedures (table)	R	R	R	5 - 5.4.5.3.2	<pmcstable>	

Table A.4 TM Requirements Matrix for _____

TM Content	AVUM -20 -20&P	AVIM -30 -30&P	AVUM/ AVIM -23 -23&P	MIL-STD-40051 Reference	Element Name	Req'd / Not Req'd
MAINTENANCE WORK PACKAGES NOTE As applicable, the following maintenance tasks shall be presented in the general order listed below:	R	R	R	5 - 5.4.5.8	<maintwp>	
Assembly and preparation for use (aviation only)				5 - 5.4.5.8.1.3	<assem>	
Servicing				5 - 5.4.5.8.1.4	<service>	
Ground handling				5 - 5.4.5.8.1.5	<groundtsk>	
Operational check				5 - 5.4.5.8.1.6	<opchk>	
Inspection of installed items				5 - 5.4.5.8.1	<inspinstitm>	
Removal				5 - 5.4.5.8.1	<remove>	
Disassembly				5 - 5.4.5.8.1	<disassem>	
Cleaning				5 - 5.4.5.8.1	<clean>	
Inspection - acceptance and rejection criteria				5 - 5.4.5.8.1.7	<acptrejinsp>	
Nondestructive testing inspection (NDTI)				5 - 5.4.5.8.1.8	<ndti>	
Repair or replacement				5 - 5.4.5.8.1.9	<repair-rplc>	
Alignment				5 - 5.4.5.8.1	<align>	
Painting				5 - 5.4.5.8.1	<paint>	
Lubrication				5 - 5.4.5.8.1	<lube>	
Assembly				5 - 5.4.5.8.1	<assem>	
Test and inspection				5 - 5.4.5.8.1.10	<test-inspect>	
Installation				5 - 5.4.5.8.1	<install>	
Adjustment				5 - 5.4.5.8.1	<adjust>	
Calibration				5 - 5.4.5.8.1	<calibration>	
Radio interference suppression				5 - 5.4.5.8.1	<ris>	
Placing in service				5 - 5.4.5.8.1.11	<pis>	
Testing				5 - 5.4.5.8.1.12	<test-pass>	
Preparation for storage or shipment				5 - 5.4.5.8.1.16	<pss>	

Table A.4 TM Requirements Matrix for _____

TM Content	AVUM -20 -20&P	AVIM -30 -30&P	AVUM/ AVIM -23 -23&P	MIL-STD-40051 Reference	Element Name	Req'd / Not Req'd
Classification of defects				5 - 5.4.5.8.1.17	<defect>	
Handling ammunition				5 - 5.4.5.8.1.18	<handling>	
Ammunition markings				5 - 5.4.5.8.1	<marking>	
Procedures for ammunition activation				5 - 5.4.5.8.1.19	<arm>	
<i>AMMUNITION MAINTENANCE WORK PACKAGE</i>				5 - 5.4.5.6	<ammowp>	
<i>AUXILIARY EQUIPMENT MAINTENANCE WORK PACKAGE</i>				5 - 5.4.5.7	<auxeqwp>	
CHAPTER X. SUPPORTING INFORMATION NOTE Applicable supporting information work packages shall be arranged in the order in which they are presented here and numbered accordingly.	R	R	R	7 - 5.1	<sim>	
<i>REFERENCES</i>	R	R	R	7 - 5.2	<refwp>	
<i>MAC</i>	R	NR	R	7 - 5.3	<macwp>	
<i>RPSTL</i> (AVUM, AVIM, AVUM/AVIM) (AVUM&P, AVIM&P, AVUM/AVIM&P)	NR R	NR R	NR R	7 - 5.4	<rpstlwp>	
<i>EXPENDABLE AND DURABLE ITEMS LIST</i>				7 - 5.7	<explistwp>	
<i>TOOL IDENTIFICATION LIST</i>	R	R	R	7 - 5.10	<toolidwp>	
<i>ILLUSTRATED LIST OF MANUFACTURED ITEMS</i>	R	R	R	7 - 5.11	<manuwp>	
<i>TORQUE LIMITS</i>	R	R	R	7 - 5.12	<torquewp>	
<i>MANDATORY REPLACEMENT PARTS</i>	R	R	R	7 - 5.13	<mrplwp>	
<i>AMMUNITION MARKING INFORMATION</i>				7 - 5.14	<ammowp>	
<i>FOREIGN AMMUNITION (NATO)</i>				7 - 5.15	<natowp>	
<i>AIRCRAFT INVENTORY MASTER GUIDE</i>	R	R	R	7 - 5.16	<inventorywp>	

MIL-STD-40051

Table A.4 TM Requirements Matrix for _____

TM Content	AVUM -20 -20&P	AVIM -30 -30&P	AVUM/ AVIM -23 -23&P	MIL-STD-40051 Reference	Element Name	Req'd / Not Req'd
<i>STORAGE OF AIRCRAFT</i>	R	R	R	7 - 5.17	<storagewp>	
<i>WEIGHT AND BALANCE</i>		R		7 - 5.18	<wtbalwp>	
<i>WIRING DIAGRAMS</i>				7 - 5.22	<wiringwp>	
<i>ADDITIONAL SUPPORTING WORK PACKAGES</i>				7 - 5.23	<genwp>	
REAR MATTER	R	R	R	1 - 5.8.2	<rear>	
Glossary				1 - 5.8.2.1	<glossary>	
Alphabetical index				1 - 5.8.2.2	<aindx>	
Foldout pages				1 - 5.8.2.3	<foldsect>	
DA Form 2028	R	R	R	1 - 5.8.2.4	<da2028>	
Authentication page	R	R	R	1 - 5.8.2.5	<authent>	
Back cover	R	R	R	1 - 5.8.2.6	<back>	

Table A.5 TM Requirements Matrix for _____

TM Content	RPSTL	MIL-STD-40051 Reference	Element Name	Req'd / Not Req'd
FRONT MATTER	R	6 - 5.2	<frnt>	
Front cover	R	1 - 5.8.1.1	<frntcover>	
List of effective pages / work packages		1 - 5.8.1.3		
Revision transmittal page	R	1 - 5.8.1.4	<chgsheet>	
Title block page	R	1 - 5.8.1.5	<titleblk>	
Table of contents	R	1 - 5.8.1.6	<contents>	
CHAPTER X. REPAIR PARTS AND SPECIAL TOOLS LIST FOR (enter equipment name)	R	6 - 5.1	<pim>	
<i>INTRODUCTION WORK PACKAGE</i>	R	6 - 5.4	<introwp>	
<i>REPAIR PARTS LIST WORK PACKAGES</i>	R	6 - 5.5	<plwp>	
<i>SPECIAL TOOLS LIST WORK PACKAGE</i>	R	6 - 5.6	<stlwp>	
<i>NSN INDEX WORK PACKAGE</i>	R	6 - 5.7.1	<nsnindxwp>	
<i>P/N INDEX WORK PACKAGE</i>	R	6 - 5.7.2	<pnindxwp>	
<i>REFERENCE DESIGNATOR INDEX WORK PACKAGE</i>		6 - 5.7.3	<refdesindxwp>	
REAR MATTER	R	6 - 5.9	<rear>	
DA Form 2028	R	1 - 5.8.2.4	<da2028>	
Authentication page	R	1 - 5.8.2.5	<authent>	
Back cover	R	1 - 5.8.2.6	<back>	

Table A.6 TM Requirements Matrix for _____

TM Content	DMWR and DMWR with RPSTL	MIL-STD-40051 Reference	Element Name	Req'd / Not Req'd
FRONT MATTER	R	1 - 5.8.1	<frnt>	
Front cover	R	1 - 5.8.1.1	<frntcover>	
Warning summary		1 - 5.8.1.2	<warnsum>	
List of effective pages / work packages		1 - 5.8.1.3		
Revision transmittal page	R	1 - 5.8.1.4	<chgsheet>	
Title block page	R	1 - 5.8.1.5	<titleblk>	
Table of contents	R	1 - 5.8.1.6	<contents>	
How to use this manual	NR	1 - 5.8.1.7	<howtouse>	
CHAPTER 1. INTRODUCTORY INFORMATION WITH THEORY OF OPERATION	R	2 - 5.1	<gim>	
<i>GENERAL INFORMATION WORK PACKAGE</i>	R	2 - 5.1.1	<ginfowp>	
Scope	R	2 - 5.1.1.1	<scope>	
Maintenance forms, records, and reports	R	2 - 5.1.1.2	<mfrf>	
Reporting equipment improvement recommendations (EIR)	R	2 - 5.1.1.3	<eir>	
Hand receipt manuals		2 - 5.1.1.4	<handreceipt>	
Corrosion prevention and control (CPC)		2 - 5.1.1.5	<cpedata>	
Destruction of Army materiel to prevent enemy use		2 - 5.1.1.6	<destructmat>	
Preparation for storage or shipment		2 - 5.1.1.7	<pssref>	
Warranty information		2 - 5.1.1.8	<wrntyref>	
Nomenclature cross-reference list		2 - 5.1.1.9	<nomenreflist>	
List of abbreviations		2 - 5.1.1.10	<loa>	
Quality assurance (QA) (aviation only)		2 - 5.1.1.11	<qainfo>	

Table A.6 TM Requirements Matrix for _____

TM Content	DMWR and DMWR with RPSTL	MIL-STD-40051 Reference	Element Name	Req'd / Not Req'd
Safety, care, and handling		2 - 5.1.1.12	<sftyinfo>	
Nuclear hardness		2 - 5.1.1.13	<hcp>	
Security measures for electronic data		2 - 5.1.1.14	<secrref>	
Calibration		2 - 5.1.1.15	<calref>	
Engineering change proposals (ECP)	R	2 - 5.1.1.16	<ecp>	
Deviations and exceptions	R	2 - 5.1.1.17	<deviation>	
Mobilization requirements	R	2 - 5.1.1.18	<mobreq>	
Copyright credit line		2 - 5.1.1.19	<copyrt>	
<i>EQUIPMENT DESCRIPTION AND DATA WORK PACKAGE</i>	R	2 - 5.1.3	<descwp>	
Equipment characteristics, capabilities, and features	R	2 - 5.1.3.1	<eqpinfo>	
Location and description of major components		2 - 5.1.3.2	<locdesc>	
Differences between models		2 - 5.1.3.3	<eqpdiff>	
Equipment data		2 - 5.1.3.4	<eqpdata>	
Equipment configuration		2 - 5.1.3.5	<eqpconfig>	
<i>SUPPORTING DATA WORK PACKAGE FOR REPAIR PARTS, SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT</i>	R	2 - 5.1.5	<supdatawp>	
CHAPTER X. DEPOT MAINTENANCE INSTRUCTIONS NOTE All maintenance work packages shall include a scope of task, initial setup, and all maintenance tasks applicable to the equipment.	R	5 - 5.3	<mim>	
<i>MAINTENANCE WORK PACKAGES</i> NOTE As applicable, the following maintenance tasks shall be presented in the general order listed below:	R	5 - 5.4.5.8	<maintwp> <maintsk>	
Preshop analysis	R	5 - 5.4.5.8.1.2	<pshopanal>	

Table A.6 TM Requirements Matrix for _____

TM Content	DMWR and DMWR with RPSTL	MIL-STD-40051 Reference	Element Name	Req'd / Not Req'd
Servicing		5 - 5.4.5.8.1.4	<service>	
Operational check		5 - 5.4.5.8.1.6	<opchk>	
Inspection of installed items		5 - 5.4.5.8.1	<inspinstitm>	
Removal		5 - 5.4.5.8.1	<remove>	
Disassembly		5 - 5.4.5.8.1	<disassem>	
Cleaning		5 - 5.4.5.8.1	<clean>	
Inspection - acceptance and rejection criteria		5 - 5.4.5.8.1.7	<acptrejinsp>	
Nondestructive testing inspection (NDTI)		5 - 5.4.5.8.1.8	<ndti>	
Repair or replacement		5 - 5.4.5.8.1.9	<repair-rplc>	
Alignment		5 - 5.4.5.8.1	<align>	
Painting		5 - 5.4.5.8.1	<paint>	
Lubrication		5 - 5.4.5.8.1	<lube>	
Assembly		5 - 5.4.5.8.1	<assem>	
Test and inspection		5 - 5.4.5.8.1.10	<test-inspect>	
Installation		5 - 5.4.5.8.1	<install>	
Adjustment		5 - 5.4.5.8.1	<adjust>	
Calibration		5 - 5.4.5.8.1	<calibration>	
Radio interference suppression		5 - 5.4.5.8.1	<ris>	
Placing in service		5 - 5.4.5.8.1.11	<pis>	
Testing		5 - 5.4.5.8.1.12	<test-pass>	
Quality assurance requirements	R	5 - 5.4.5.8.1.13	<qawp>	
Preservation, packaging, and marking	R	5 - 5.4.5.8.1.14	<ppm>	
Preparation for storage or shipment		5 - 5.4.5.8.1.16	<pss>	

Table A.6 TM Requirements Matrix for _____

TM Content	DMWR and DMWR with RPSTL	MIL-STD-40051 Reference	Element Name	Req'd / Not Req'd
CHAPTER X. SUPPORTING INFORMATION NOTE Applicable supporting information work packages shall be arranged in the order in which they are presented here and numbered accordingly.	R	7 - 5.1	<sim>	
<i>REFERENCES</i>	R	7 - 5.2	<refwp>	
<i>RPSTL</i> (Required for DMWR with RPSTL only)		7 - 5.4	<rpstlwp>	
<i>EXPENDABLE AND DURABLE ITEMS LIST</i>		7 - 5.7	<explistwp>	
<i>DEPOT MOBILIZATION REQUIREMENTS</i>	R	7 - 5.19	<mobilwp>	
<i>COMPONENT CHECKLIST</i>	R	7 - 5.20	<compchklistwp>	
<i>QUALITY ASSURANCE REQUIREMENTS</i>	R	7 - 5.21	<qawp>	
<i>ADDITIONAL SUPPORTING WORK PACKAGES</i>		7 - 5.23	<genwp>	
REAR MATTER	R	1 - 5.8.2	<rear>	
Glossary		1 - 5.8.2.1	<glossary>	
Alphabetical index		1 - 5.8.2.2	<aindx>	
Foldout pages		1 - 5.8.2.3	<foldsect>	
DA Form 2028	R	1 - 5.8.2.4	<da2028>	
Authentication page	R	1 - 5.8.2.5	<authent>	
Back cover	R	1 - 5.8.2.6	<back>	

Table A.7 TM Requirements Matrix for _____

TM Content	Aircraft Troubleshooting	MIL-STD-40051 Reference	Element Name	Req'd / Not Req'd
FRONT MATTER	R	1 - 5.8.1	<frnt>	
Front cover	R	1 - 5.8.1.1	<frntcover>	
Warning summary		1 - 5.8.1.2	<warnsum>	
List of effective pages / work packages		1 - 5.8.1.3		
Revision transmittal page	R	1 - 5.8.1.4	<chgsheet>	
Title block page	R	1 - 5.8.1.5	<titleblk>	
Table of contents	R	1 - 5.8.1.6	<contents>	
How to use this manual	R	1 - 5.8.1.7	<howtouse>	
CHAPTER X. TROUBLESHOOTING PROCEDURES	R		<tim>	
<i>INTRODUCTION WORK PACKAGE</i>			<tsintrowp>	
<i>EQUIPMENT DESCRIPTION AND DATA WORK PACKAGE</i>			<descwp>	
Equipment characteristics, capabilities, and features			<eqpinfo>	
Location and description of major components			<locdesc>	
Differences between models			<eqpdif>	
Equipment data			<eqpdata>	
Equipment configuration			<eqpconfig>	
Safety, care, and handling			<sftyinfo>	
Controls and indicators			<ctrlindwp>	
<i>THEORY OF OPERATION WORK PACKAGE</i>			<thrywp>	
<i>MALFUNCTION / SYMPTOM INDEX WORK PACKAGE</i>			<symndxwp>	
<i>TROUBLESHOOTING PROCEDURES WORK PACKAGE</i>	R		<tswp>	
REAR MATTER	R	1 - 5.8.2	<rear>	
Glossary		1 - 5.8.2.1	<glossary>	
Alphabetical index		1 - 5.8.2.2	<aindx>	

Table A.7 TM Requirements Matrix for _____

TM Content	Aircraft Troubleshooting	MIL-STD-40051 Reference	Element Name	Req'd / Not Req'd
Foldout pages		1 - 5.8.2.3	<foldsect>	
DA Form 2028	R	1 - 5.8.2.4	<da2028>	
Authentication page	R	1 - 5.8.2.5	<authent>	
Back cover	R	1 - 5.8.2.6	<back>	

Table A.8 TM Requirements Matrix for _____

TM Content	Aircraft PMS	MIL-STD-40051 Reference	Element Name	Req'd / Not Req'd
FRONT MATTER	R	1 - 5.8.1		
Cover page	R	1 - 5.8.1.1		
Warning summary	R	1 - 5.8.1.2	<warnsum>	
CHAPTER 1. GENERAL INFORMATION CHAPTER	R	2 - 5.1	<gim>	
<i>GENERAL INFORMATION WORK PACKAGE</i>	R	2 - 5.1.2	<pms-ginfowp>	
Scope	R	2 - 5.1.2.1	<scope>	
Inspection requirements	R	2 - 5.1.2.2	<inspec-req>	
Maintenance activities	R	2 - 5.1.2.3	<scope>	
General information	R	2 - 5.1.2.4	<geninfo>	
CHAPTER X. MAINTENANCE INFORMATION CHAPTER	R	5 - 5.3	<mim>	
<i>PMS INSPECTION WORK PACKAGE</i>	R	5 - 5.4.5.10	<pms-inspecwp>	
Checklist data	R	5 - 5.4.5.10	<pms-form>	